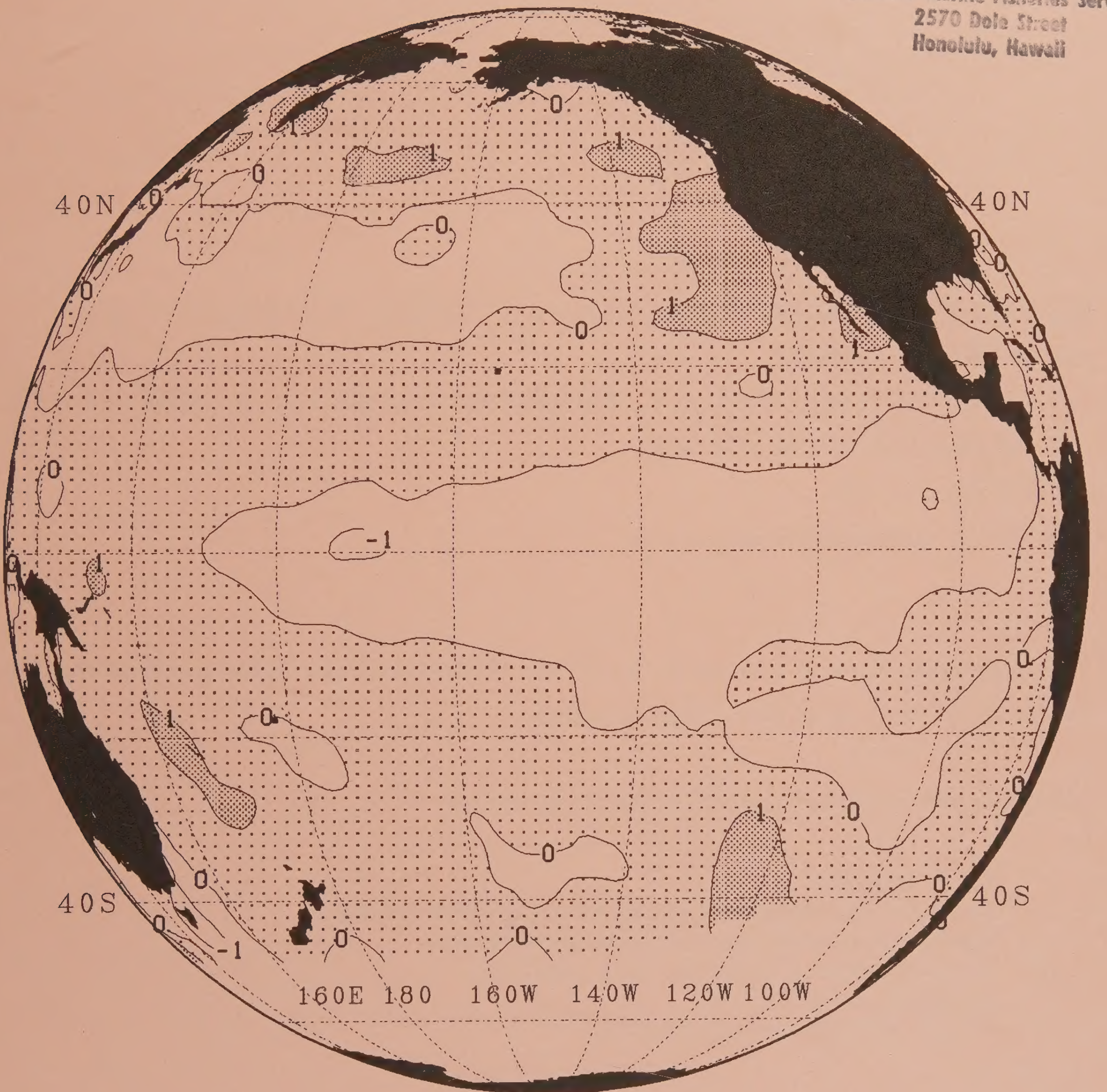
気象庁海洋月報

Monthly Ocean Report

February 1996 (No. 38)



El Niño Monitoring Center
Japan Meteorological Agency

気象庁海洋気象部海洋課
エルニーニョ監視センター

平成8年2月

気象庁海洋月報は、気象庁海洋気象部海洋課エルニーニョ監視センターで作成されています。
本月報に関する問い合わせは、
〒100　東京都千代田区大手町1-3-4　気象庁海洋気象部海洋課エルニーニョ監視センターまで。
電　話 (03) 3212-8341 (内線 5134、5135)
ＦＡＸ (03) 3211-3047
電子メール elnino@umi.hq.kishou.go.jp

Monthly Ocean Report is prepared by the El Niño Monitoring Center, Oceanographical Division, Marine Department, Japan Meteorological Agency.

Correspondence relating to this report may be directed to :

Kunio SAKURAI
Head, El Niño Monitoring Center, Oceanographical Division
Marine Department, Japan Meteorological Agency
1-3-4 Ote-machi, Chiyoda-ku, Tokyo 100 Japan
Facsimile: +81-3-3211-3047
e-mail : elnino@umi.hq.kishou.go.jp

表紙は、1996年２月の太平洋の月平均海面水温偏差図です。
陰影部は、平年より高温の海域を示しています。

The figure on the front cover shows the monthly mean SST anomalies for February 1996 in the Pacific Ocean.
Areas of positive anomalies are shaded.

目　　次

	図	ページ
海況の特徴（1996年２月）		i-ii
Ａ海域の1949年～1996年の月平均海面水温	表A，図Ａ	iii
全球及び太平洋		
エルニーニョ監視指数		
エルニーニョ監視指数	第1表	1-2
太平洋赤道域の海面水温偏差時系列図	1	3
太平洋月平均海面水位偏差時系列図	2	4
南方振動指数及び海面気圧偏差時系列図	3	5
月平均上層雲量指数時系列図	4	5
赤道域東西風指数時系列図	5	6
1996年２月の海況及び気象		
海面水温		
全球月平均海面水温図及び偏差図	6	7
表層水温		
太平洋表層水温（深さ100m）図	7	8
太平洋20℃深度図及び偏差図	8	9
太平洋の赤道に沿う表層水温及び偏差の深度－経度断面図	9	10
海　　流		
太平洋ブイ流跡図	10	11
海面水位		
太平洋海面水位偏差図（1996年１月）	11	12
気　　象		
西太平洋月平均上層雲量分布図及び偏差図	12	13
海況及び気象の推移		
海面水温		
赤道に沿う海面水温及び偏差の時間－経度断面図	13-14	14-15
表層水温		
太平洋赤道域の表層水温の時間－深度断面図	15	16
太平洋の赤道に沿う20℃深度及び偏差の時間－経度断面図	16	17
太平洋の北緯６度線に沿う海洋表層の貯熱量及び偏差の時間－経度断面図	17	18
太平洋の赤道に沿う海洋表層の貯熱量及び偏差の時間－経度断面図	18	19
太平洋の南緯６度線に沿う海洋表層の貯熱量及び偏差の時間－経度断面図	19	20
気　　象		
太平洋の赤道に沿う海面の風応力の東西成分及び偏差の時間－経度断面図	20	21
北西太平洋		
旬平均海面水温図及び偏差図	21-23	22-24
月平均海面水温図及び偏差図	24	25
旬平均海面水温平年偏差時系列図	25	26
日本近海表層水温（深さ100m）図	26	27
旬平均海流図	27	28
測点分布図	28	29-30

Table of Contents

	Figure	Page
Highlights (February 1996)		i-ii
Monthly mean SST for region A from 1949 to 1996	Table-A, Fig. A	iii
Global and Pacific Ocean		
El Niño Monitoring Indices		
Table of El Niño Monitoring Indices	Table-1	1-2
Time Series of Equatorial Pacific SST Anomalies	1	3
Time Series of Sea Level Anomalies in the Pacific Ocean	2	4
Time Series of SOI, Sea Level Pressure Anomalies at Tahiti and Darwin	3	5
Time Series of High-Cloud Amount Index	4	5
Time Series of Zonal Wind Index	5	6
Monthly Mean and Anomaly (February 1996)		
Sea Surface Temperature (SST)		
SST and Anomalies in the Global Ocean	6	7
Subsurface Temperature		
Subsurface (at the depth of 100m) Temperature in the Pacific Ocean	7	8
Depth of 20°C Isotherm and Anomalies in the Pacific Ocean	8	9
Depth-Longitude Sections of Temperature and Anomalies along the Equator in the Pacific Ocean	9	10
Ocean Current		
Movements of Drifting Buoys in the Pacific Ocean	10	11
Sea Level		
Sea Level Anomalies in the Pacific Ocean (January 1996)	11	12
Atmospheric Conditions		
High-Cloud Amount and Anomalies in the Equatorial Pacific	12	13
Long-term Variations		
Sea Surface Temperature		
Time-Longitude Sections of SST and Anomalies along the Equator	13-14	14-15
Subsurface Temperature		
Time-Depth Sections of Equatorial Pacific Subsurface Temperatures	15	16
Time-Longitude Sections of Depth of 20°C Isotherm and Anomalies along the Equator in the Pacific Ocean	16	17
Time-Longitude Sections of Ocean Heat Content and Anomalies along 6°N in the Pacific Ocean	17	18
Time-Longitude Sections of Ocean Heat Content and Anomalies along the Equator in the Pacific Ocean	18	19
Time-Longitude Sections of Ocean Heat Content and Anomalies along 6°S in the Pacific Ocean	19	20
Atmospheric Conditions		
Time-Longitude Sections of Surface Zonal Wind Stress and Anomalies along the Equator in the Pacific Ocean	20	21
Western North Pacific Ocean		
Ten-day Mean SST and Anomalies	21-23	22-24
Monthly Mean SST and Anomalies	24	25
Time Series of Ten-day Mean SST Anomalies	25	26
Subsurface (at the depth of 100m) Temperatures in Seas Adjacent to Japan	26	27
Ten-day Analysis of Sea Surface Current	27	28
Geographical Distribution of Oceanographic Data	28	29-30

海況の特徴（1996年2月）

太平洋の海況

太平洋赤道域の海面水温は、170°Eから90°Wにかけて平年より低く、175°Eから120°Wにかけては0.5℃以上低かった。一方、160°E以西では平年より0.5℃以上高かった。エルニーニョ監視海域（4°S～4°N、150°W～90°W）の海面水温偏差は、-0.5℃だった（第1表、第1図、第6図）。

太平洋の赤道に沿った表層水温は、前月と同様に、水温躍層に沿って西部及び中部で正偏差、東部では負偏差となっていた（第9図）。

北太平洋では、25°Nから40°Nの150°W以西で平年より低かった。一方、45°N以北及び北米西岸沖では平年より1℃以上高い海域が広がっていた（第6図）。

日本近海の海況

日本近海は、北海道から東海にかけての太平洋沿岸及び日本海南部から九州西方沖にかけて平年より低かった。一方、四国・紀伊半島沖では平年より高かった（第24図）。

黒潮は、九州・四国に接岸して流れた後、紀伊半島から東南東または東に向かい、八丈島付近を経て142°Eに沿って北上し、房総半島沖を東に流れていた（第27図）。

本州東方の親潮系の冷水（深さ100mで5℃以下）は、沿岸寄りの分枝は40.5°N, 142.7°Eまで、沖合の分枝は39.0°N, 146.8°Eまで、それぞれ達していた（第26図）。

熱帯の気象

熱帯の対流活動は、南シナ海から150°E付近にかけてと、オーストラリアの東からニュージーランドにかけて活発だった。一方、160°Eから日付変更線付近にかけては対流活動は不活発だった。日付変更線付近の上層雲量指数は、-1.1と昨年8月以降連続して-1.0以下の値となった。太平洋熱帯域の東西風は、850hPaで140°Eから120°Wにかけて大きな東風偏差となり、200hPaでは120°W付近で西風偏差が顕著だった。南方振動指数（SOI）は、+0.1と平年並の値となった（第1表、第3～5図、第12図）。

[気象庁長期予報課提供]

お知らせ

今月号から「第15図　太平洋赤道域の表層水温の時間－深度断面図」（16ページ）には、海洋データ同化システム（ODAS）によって求められた赤道域の西部（160°E）、中部（140°W）、東部（110°W）における水深400mまでの水温の時間－深度断面図を掲載します。

HIGHLIGHTS February 1996

Pacific

In the equatorial Pacific, sea surface temperatures (SSTs) were below normal from 170°E to 90°W, especially in the region between 175°E and 120°W where SSTs were more than 0.5°C below normal. SSTs were more than 0.5°C above normal west of 160°E. The SST index for region B (Fig. 1) was -0.5°C (Table 1 and Figs. 1 and 6).

Positive subsurface temperature anomalies remained in the western and central part of the equatorial Pacific, and negative anomalies in the eastern part of the equatorial Pacific along the thermocline (Fig. 9).

SSTs were below normal west of 150°W between 25°N and 40°N in the North Pacific. Positive SST anomalies greater than 1°C prevailed north of 45°N and off the west coast of North America (Fig. 6).

Seas adjacent to Japan

SSTs were below normal in the Pacific coast from Hokkaido to Tokai, and in the southern part of the Japan Sea and west of Kyushu. SSTs were above normal off Shikoku and the Kii Peninsula (Fig. 24).

The Kuroshio flowed along the coast of Kyushu and Shikoku, then eastward from the Kii Peninsula. After passing near Hachijo Island, it flowed northward along 142°E, then eastward off the Boso Peninsula (Fig. 27).

Coastal and off-coastal branches of the Oyashio cold water (below 5°C at a 100 m depth) extended southward to 40.5°N, 142.7°E and 39.0°N, 146.8°E, respectively (Fig. 26).

Atmospheric conditions in the tropics

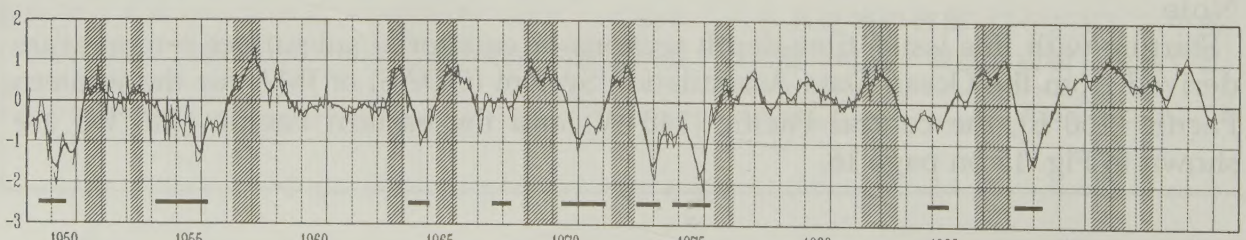
Convective activities were stronger than normal from the South China Sea to 150°E and from east of Australia to New Zealand, while weaker than normal from 160°E to the date line along the equator. High cloud amount index around the date line (5°S-5°N, 170°E-170°W) was -1.1 and has continued to have large negative values below -1.0 since August 1995. Easterly anomalies in the lower troposphere were stronger than normal over the equatorial Pacific from 140°E to 120°W. Westerly anomalies in the upper troposphere were stronger than normal around 120°W. The Southern Oscillation Index (SOI) was near normal (+0.1) (Table 1, Figs. 3-5 and 12). [Prepared by the Long-range Forecast Division, JMA]

> Note
> Starting with this issue, time-depth sections of equatorial subsurface temperature derived from the Ocean Data Assimilation System (ODAS) of JMA for the western Pacific (160°E), the central Pacific (140°W) and the eastern Pacific (110°W) are shown in Fig. 15 on page 16.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Normal	28.0	28.0	28.1	28.2	28.5	28.5	28.5	28.4	28.3	28.4	28.4	28.2
1949	27.1	28.3	-	27.7	27.5	27.9	28.5	28.4	28.0	27.6	26.9	27.4
1950	-	26.2	26.0	26.6	27.4	27.7	27.4	27.2	27.1	-	26.8	27.0
1951	26.9	27.2	27.6	28.2	29.1	28.9	28.6	28.6	28.5	28.6	29.3	28.4
1952	28.5	28.1	27.7	28.7	28.7	28.7	28.2	28.2	28.5	28.6	28.1	27.9
1953	28.6	27.9	28.3	28.6	28.6	28.7	28.9	28.4	28.5	28.5	28.6	27.2
1954	28.4	-	28.1	28.0	28.2	28.0	27.5	28.5	27.3	28.3	27.7	-
1955	28.1	27.4	27.4	27.3	28.2	28.5	27.7	27.7	27.8	26.9	26.9	26.8
1956	26.7	27.3	27.7	27.6	28.0	27.7	28.0	27.9	27.4	27.7	27.9	28.1
1957	28.1	27.9	28.2	28.6	29.2	28.7	28.8	29.0	28.9	29.2	29.3	29.2
1958	29.1	29.3	28.9	29.0	29.1	29.2	28.9	28.7	28.1	28.7	28.7	29.0
1959	28.9	28.4	28.3	28.5	29.0	28.3	28.3	28.4	28.0	28.4	28.0	28.0
1960	27.6	27.6	27.8	28.2	28.4	28.3	28.3	28.1	28.4	28.3	28.2	28.6
1961	27.9	28.0	27.9	28.1	28.4	28.4	28.3	28.2	28.1	27.8	28.3	28.0
1962	27.7	27.7	27.9	28.2	28.3	28.4	28.5	28.4	28.1	27.9	28.4	28.0
1963	27.6	27.7	28.2	28.2	28.3	28.0	29.2	29.2	29.1	29.2	29.3	28.9
1964	28.7	28.5	27.8	28.3	28.3	28.3	28.1	27.8	27.2	27.5	27.5	27.3
1965	27.8	27.8	27.6	28.0	28.6	28.8	28.9	28.8	29.1	29.3	29.1	29.0
1966	28.6	28.6	29.0	28.6	29.1	28.9	29.1	28.7	28.8	28.4	28.3	28.4
1967	27.3	27.2	27.7	28.4	28.7	28.5	28.6	28.1	28.2	28.5	28.4	28.5
1968	28.0	28.1	27.9	27.9	28.0	28.8	28.6	28.8	28.5	28.9	29.0	28.9
1969	29.0	29.1	28.8	29.0	29.0	29.0	28.9	28.8	29.0	29.3	28.9	28.8
1970	28.7	28.7	28.4	28.5	28.8	28.8	28.7	28.0	27.7	27.7	27.8	27.0
1971	26.9	27.2	27.3	27.7	28.1	28.0	27.9	27.8	27.5	27.8	27.7	27.9
1972	27.9	28.1	28.1	28.6	29.2	29.0	29.1	28.8	28.8	28.9	29.3	29.1
1973	28.8	28.7	28.5	28.3	28.4	28.0	27.9	27.8	27.5	27.3	26.9	26.4
1974	26.1	26.5	27.4	27.4	27.7	28.0	27.4	27.7	27.6	27.3	27.4	27.5
1975	27.4	27.7	27.5	27.7	27.6	27.6	27.5	27.0	26.8	26.5	26.7	26.0
1976	26.7	27.0	27.7	28.2	28.0	28.2	28.3	28.6	28.3	29.0	29.0	28.3
1977	28.4	27.8	28.2	28.4	28.5	28.8	28.9	28.8	29.0	29.0	29.1	29.0
1978	28.8	28.5	28.3	28.2	28.7	28.4	28.3	28.1	28.2	28.3	28.4	28.4
1979	28.5	28.3	28.4	28.2	28.6	28.6	28.7	28.4	28.9	28.8	28.9	28.7
1980	28.7	28.6	28.5	28.8	28.9	28.8	28.9	28.4	28.7	28.5	28.6	28.5
1981	28.1	28.0	28.3	28.2	28.3	28.4	28.3	28.3	28.5	28.4	28.2	28.3
1982	28.3	28.1	28.3	28.7	29.2	29.4	28.6	28.8	28.8	29.4	29.0	29.0
1983	28.9	28.6	28.7	28.7	29.0	28.9	28.8	28.4	28.2	28.0	28.0	27.8
1984	27.7	27.5	27.5	27.5	28.0	28.1	28.3	28.2	28.2	28.1	28.0	27.8
1985	27.8	27.6	27.4	27.7	27.9	28.1	28.3	28.4	28.3	28.4	28.6	28.6
1986	28.3	28.2	28.2	28.1	28.5	28.7	28.8	29.0	28.9	29.1	29.1	29.1
1987	28.9	28.8	28.7	28.7	29.1	29.3	29.1	29.3	29.3	29.5	29.5	29.2
1988	28.9	28.5	28.3	28.0	28.3	28.0	28.0	27.8	27.6	26.8	26.9	26.9
1989	26.5	26.7	27.1	27.5	28.0	27.8	28.0	27.9	28.2	28.2	28.3	28.5
1990	28.4	28.6	28.6	28.6	28.8	28.8	29.0	29.1	28.9	29.1	29.0	29.0
1991	28.8	28.5	28.5	28.9	29.3	29.2	29.2	29.2	29.2	29.5	29.4	29.4
1992	28.9	29.0	28.9	29.2	29.4	29.2	29.2	29.1	28.8	28.8	28.7	28.8
1993	28.5	28.4	28.4	28.7	29.0	29.1	29.1	28.8	29.1	28.8	28.9	28.7
1994	28.2	28.0	28.2	28.4	28.9	29.0	29.2	29.4	29.1	29.3	29.5	29.4
1995	29.0	28.9	28.8	28.8	29.0	29.0	28.7	28.4	28.1	28.0	27.9	28.0
1996	27.9	27.6										

表A　A海域（4°S–4°N, 160°E–150°W）の1949年～1996年の月平均海面水温（℃）
平年値は各月の30年間（1961年～1990年）の平均値

Table A　Monthly mean SST (°C) for region A (4°S-4°N, 160°E-150°W) from 1949 to 1996.
Normals are computed from 30-year (1961-1990) base period.



エルニーニョ現象　El Niño event　　ラニーニャ現象　La Niña event

図A　A海域の海面水温偏差時系列図（1949年～1996年）

Fig. A　Time series of monthly mean SST anomalies (°C) for region A from 1949 to 1996

DATE	SEA SURFACE TEMPERATURE AND ANOMALY (°C)								SEA LEVEL ANOMALY (cm)					
	Region D 14N-Eq. 130E-150E		Region A 4N-4S 160E-150W		Region B 4N-4S 150W-90W		Region C Eq.-10S 90W-80W		Yap 10N,138E	Rabaul 4S,152E	Majuro 7N,171E	Tarawa 1N,173E	Christ-mas 2N,157W	Santa Cruz 1S, 90W
MAR 95	28.2	-0.2	28.8	+0.7	26.9	0.0	25.8	-0.1	1.5	6.3	5.6	1.5	0.0	-2.4
APR 95	28.7	-0.1	28.8	+0.6	26.9	-0.2	24.6	-0.5	-6.7	9.5	10.6	0.7	-3.2	-10.9
MAY 95	29.2	+0.1	29.0	+0.5	26.2	-0.4	23.1	-0.8	-3.2	6.4	5.7	3.8	2.1	-7.5
JUN 95	29.6	+0.3	29.0	+0.5	26.0	-0.1	22.2	-0.5	-0.8	5.5	-0.6	2.2	-0.4	-2.4
JUL 95	29.5	+0.3	28.7	+0.2	25.3	+0.1	21.7	+0.1	5.3	10.7	1.0	-0.2	-5.6	-0.3
AUG 95	29.8	+0.7	28.4	0.0	24.3	-0.3	20.5	-0.1	3.8	15.1	6.7	-3.3	-8.9	-2.5
SEP 95	29.7	+0.5	28.1	-0.2	24.0	-0.6	20.7	+0.4	8.9	16.7	7.6	-2.7	-14.3	-2.7
OCT 95	29.8	+0.5	28.0	-0.4	23.9	-0.7	20.4	-0.3	13.0	15.5	4.6	1.1	-6.1	-4.9
NOV 95	29.7	+0.5	27.9	-0.5	23.9	-0.7	21.5	0.0	16.0	14.0	10.8	-1.5	-9.5	-3.2
DEC 95	29.5	+0.6	28.0	-0.2	24.2	-0.7	21.9	-0.7	13.5	17.2	3.5	1.0	-7.3	-6.2
JAN 96	29.0	+0.5	27.9	-0.1	25.0	-0.4	24.1	-0.2	10.3	-	8.2	5.8	-3.7	-4.5
FEB 96	28.6	+0.3	27.6	-0.4	25.7	-0.5	26.0	+0.3						

第１表（ａ）　エルニーニョ監視指数

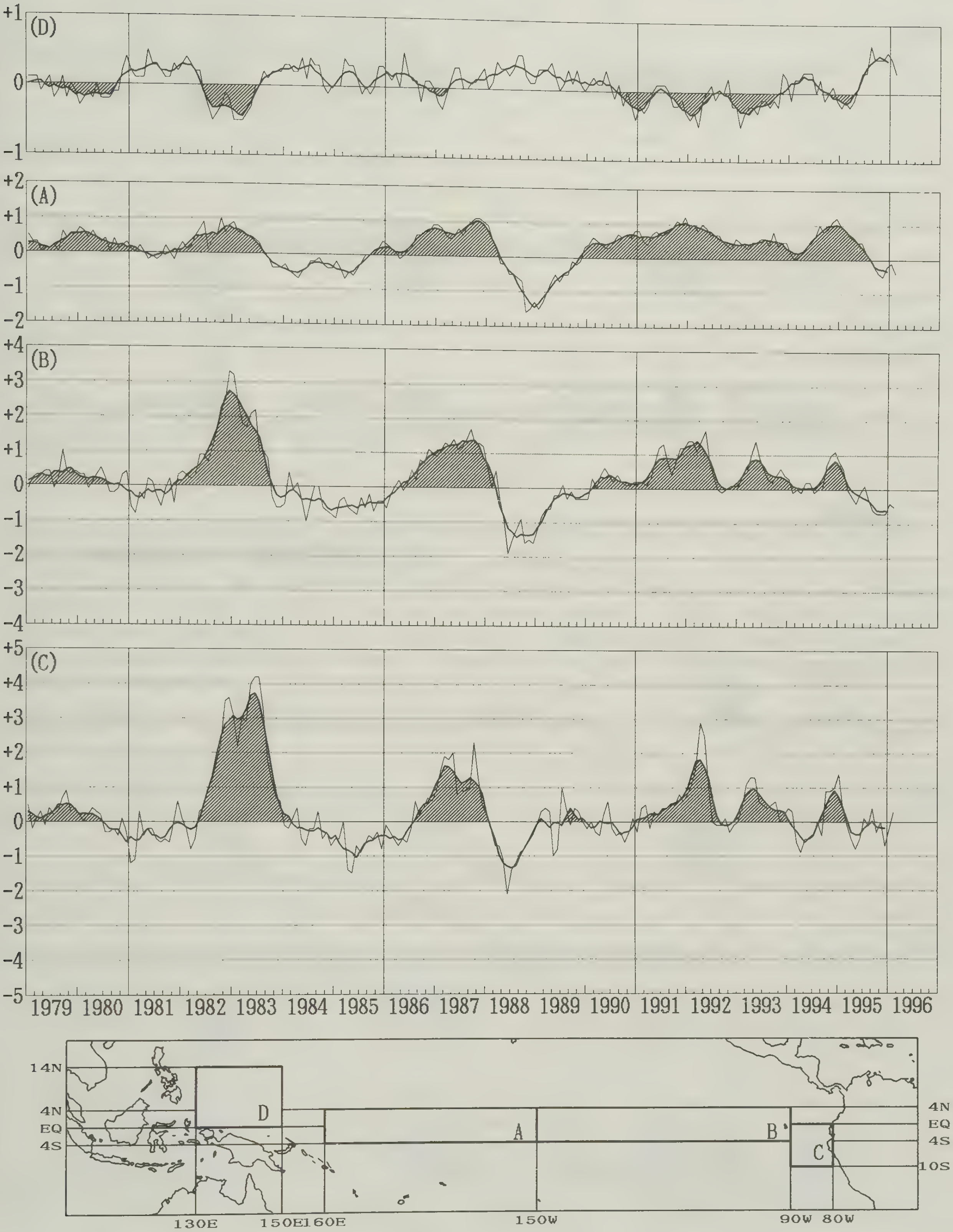
Table 1 (a)　El Niño monitoring indices. Data sources are the El Niño Monitoring Center of JMA for the sea surface temperature and anomaly and SOC for ISLP-Pac, Department of Oceanography, University of Hawaii for the sea level anomaly.

DATE	SOI	SEA LEVEL PRESSURE ANOMALIES		HIGH CLOUD AMOUNT INDEX			EQUATORIAL ZONAL WIND INDEX				
		TAHITI 17°33'S, 149°37'W	DARWIN 12°24'S, 130°52'E	HCLD-PH 20N-10N 110E-140E	HCLD-MC 5N-5S 110E-135E	HCLD-DL 5N-5S 170E-170W	U200-IN 5N-5S 80E-100E	U200-CP 5N-5S 180 -125W	U850-WP 5N-5S 160E-175W	U850-CP 5N-5S 170W-135W	U850-EP 5N-5S 130W-100W
MAR 95	0.4	0.3	-0.5	-0.7	0.3	-0.2	-0.2	-0.1	-0.6	-0.4	-0.3
APR 95	-1.4	-1.6	0.0	-1.1	-0.2	-0.6	0.7	0.0	0.0	-0.2	0.1
MAY 95	-1.0	-0.7	0.6	0.3	-1.2	0.0	-0.9	0.1	0.0	-0.1	0.2
JUN 95	-0.1	0.3	0.4	-1.8	-0.4	-0.7	0.2	0.2	-0.9	-0.4	0.6
JUL 95	0.4	0.4	-0.4	1.5	-0.1	-0.7	-1.1	0.0	-0.8	-0.8	0.3
AUG 95	0.0	0.4	0.3	0.3	0.0	-1.1	0.0	1.4	-1.3	-1.5	-0.9
SEP 95	0.2	0.4	0.0	1.4	0.7	-1.0	-2.0	1.5	-0.9	-1.0	-0.1
OCT 95	-0.3	-0.7	-0.5	0.1	0.2	-1.0	-0.7	0.6	-1.2	-0.7	0.1
NOV 95	0.1	0.1	-0.1	0.1	1.4	-1.2	-2.1	0.8	-1.1	-0.8	-0.8
DEC 95	-0.5	-0.9	0.0	4.0	1.2	-1.2	-0.3	-0.1	-1.0	-0.3	0.3
JAN 96	0.8	1.0	-0.7	1.6	1.5	-1.3	-1.0	0.8	-1.2	-1.2	0.0
FEB 96	0.1	-0.3	-0.5	1.7	1.4	-1.1	-0.7	0.4	-1.1	-1.4	-0.6

第１表（ｂ）　エルニーニョ監視指数（続き）

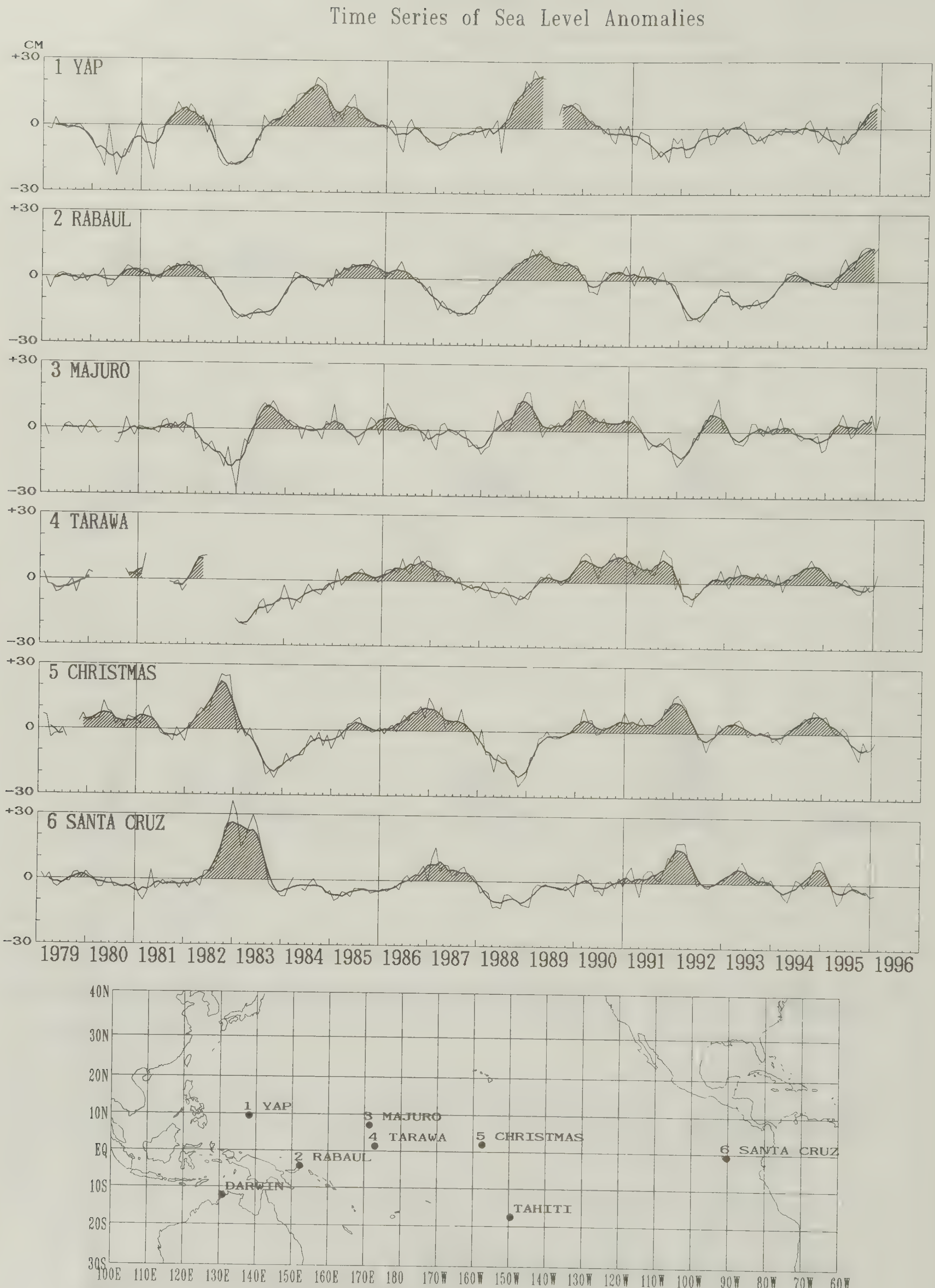
Table 1 (b)　El Niño monitoring indices (continued).
Data sources are the Long-range Forecast Division of JMA for the atmospheric conditions.

Time Series of Equatorial Pacific SST Anomalies



第1図　太平洋赤道域の海面水温偏差時系列図

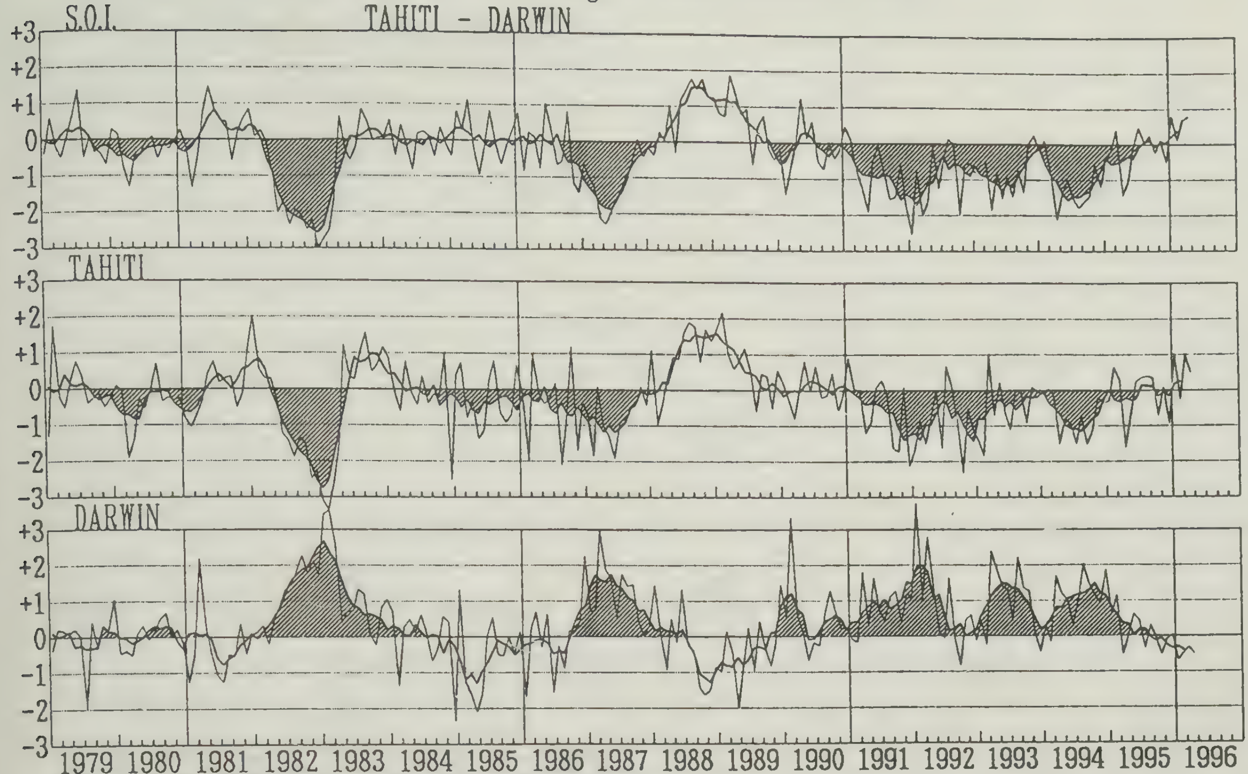
Fig.1 Time series of monthly mean SST anomalies (°C) in the equatorial Pacific Ocean for the areas indicated at the bottom. Thin lines show the monthly means and thick lines their 5-month running means. Positve anomalies (A, B, C) and negative anomalies (D) are shaded. Anomalies are computed from the JMA climatology (1961-1990).



第2図　太平洋月平均海面水位偏差時系列図

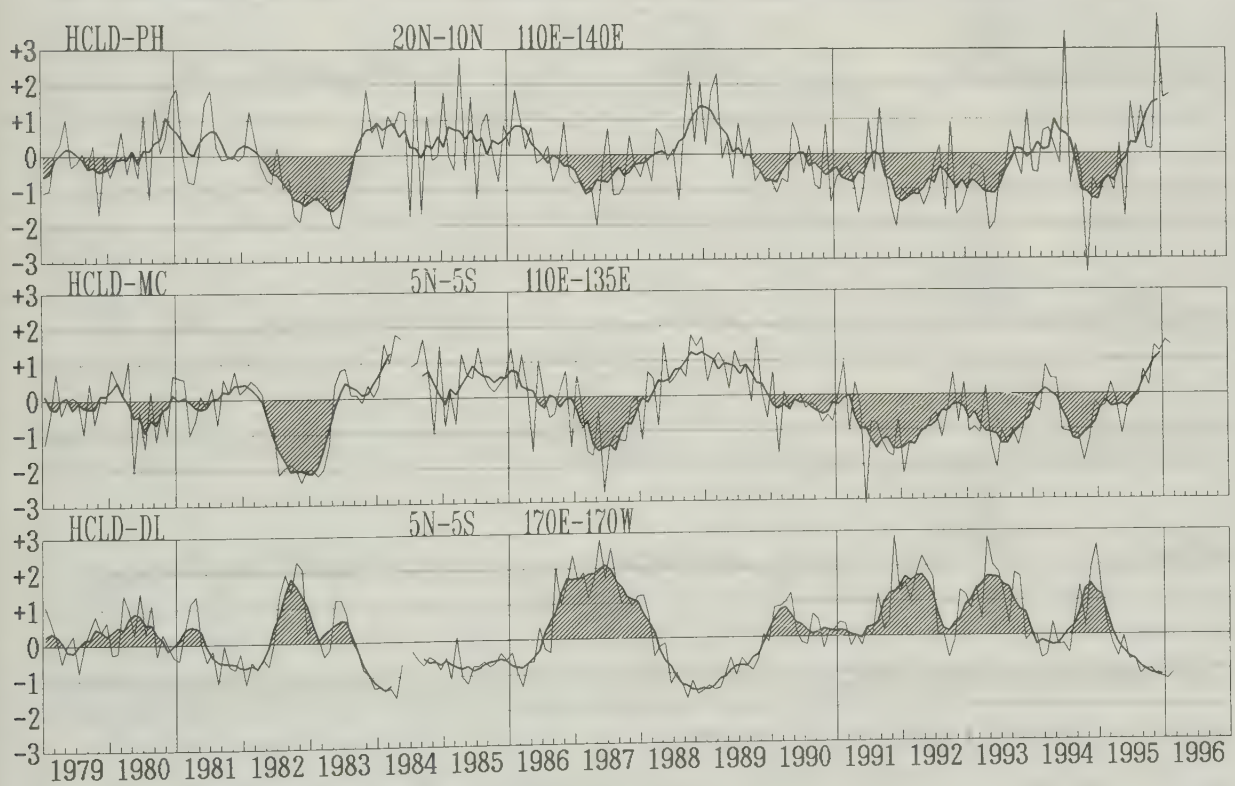
Fig.2 Time series of sea level anomalies computed from 1976-1990 monthly mean values obtained from the stations indicated at the bottom. Thin lines show the monthly mean and thick lines their 5-month running means. Positive anomalies are shaded.

Time Series of SOI and High-Cloud Amount Index



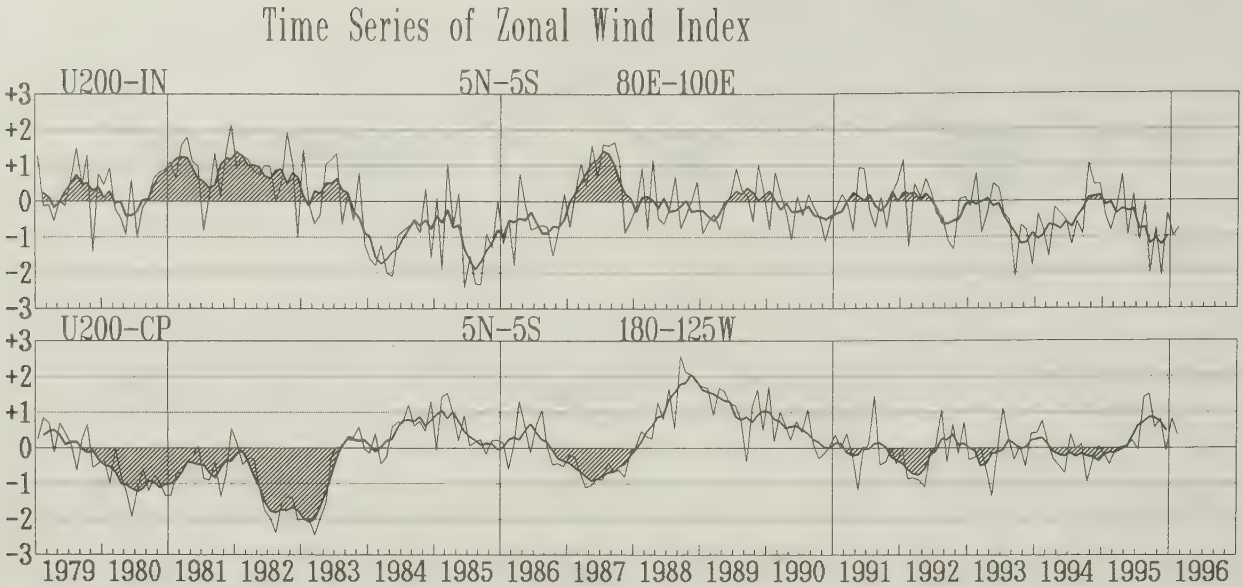
第3図　南方振動指数及び海面気圧偏差時系列図

Fig.3 Time series of the Southern Oscillation Index (top) and monthly mean sea level pressure standardized anomalies at Tahiti (middle) and Darwin (bottom). Thin lines show the monthly mean and thick lines their 5-month running means. Negative anomalies (top, middle) and posotive anomalies (bottom) are shaded. Normals and standard deviations are computed from 1961-1990 base periods. Data sources are the Long-range Forecast Division of JMA.



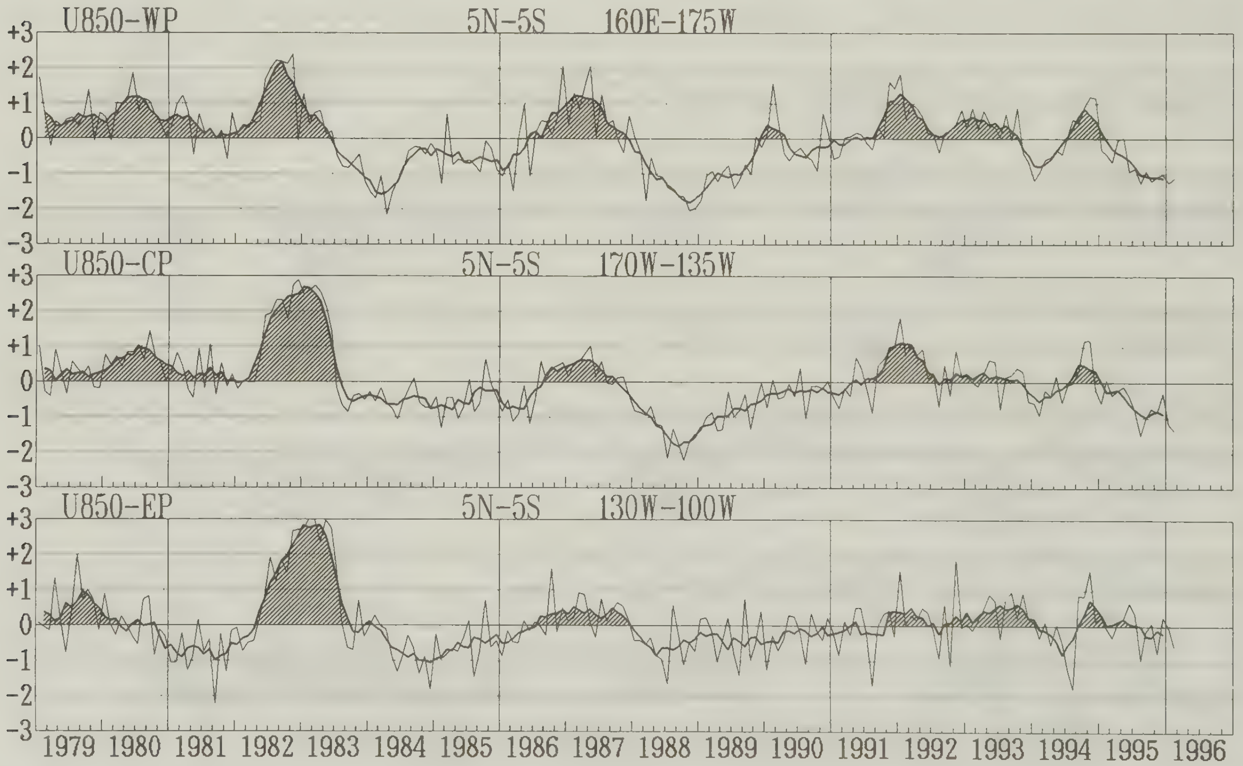
第4図　月平均上層雲量指数時系列図

Fig.4 Time series of high-cloud amount index averaged over the area 20°N-10°N, 110°E-140°E (top), 5°N-5°S, 110°E-135°E (middle), and 5°N-5°S, 170°E-170°W (bottom). Thin lines show the monthly mean and thick lines their 5-month running means. Negative anomalies (top, middle) and positive anomalies (bottom) are shaded. Normals and standard deviations are computed from 1978-1990 base periods. Data sources are the Long-range Forecast Division of JMA.



第5図-1　赤道域東西風指数(200ｈＰａ)時系列図

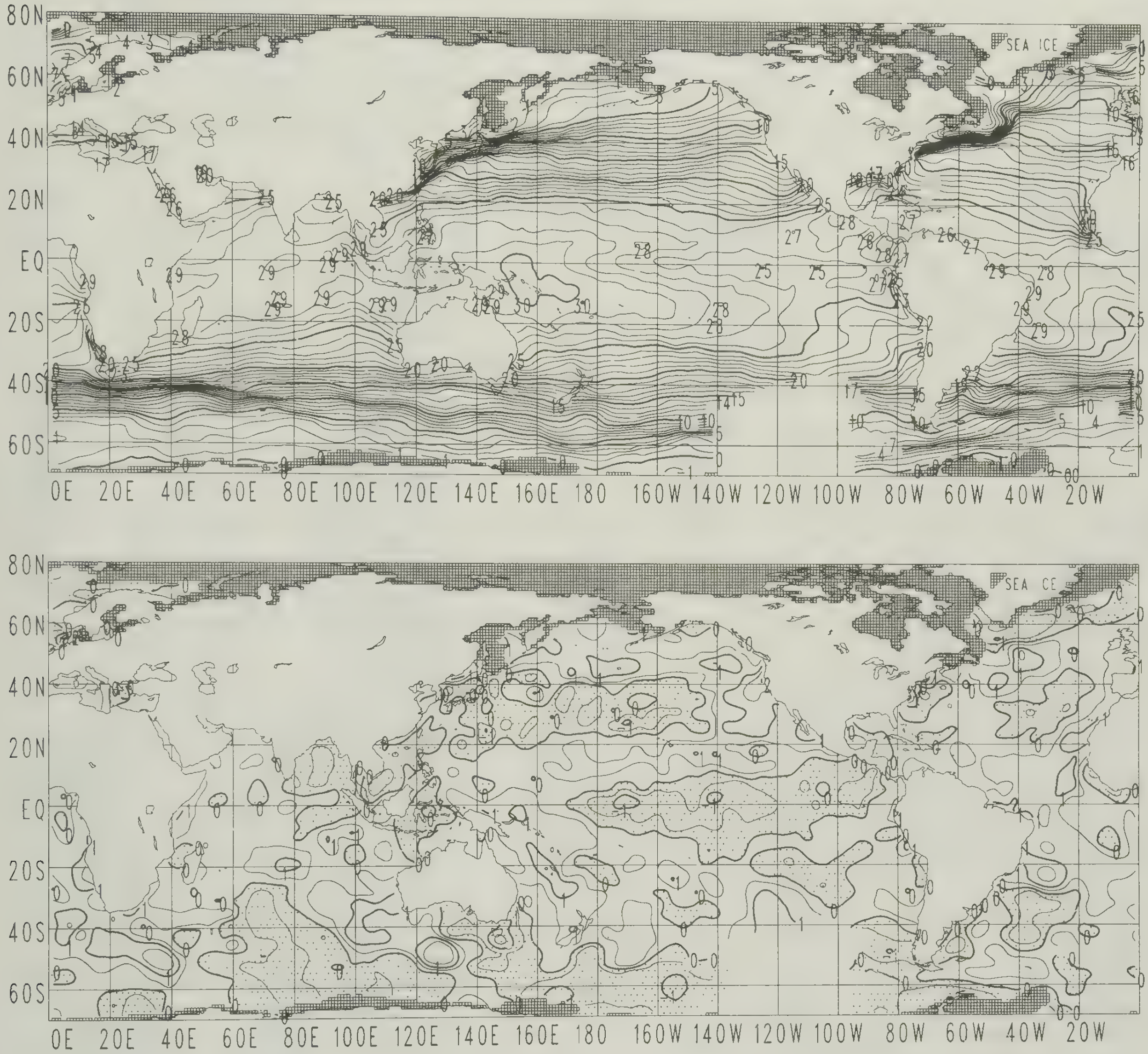
Fig.5-1 Time series of 200hPa zonal wind index averaged over the areas of 5°N-5°S, 80°E-100°E (top), and 5°N-5°S, 180°-125°W (bottom).
Thin lines show the monthly mean and thick lines their 5-month running means.
Positive anomalies (top) and negative anomalies (bottom) are shaded.
Normals and standard deviations are computed from 1979-1990 base periods.
Data sources are the Long-range Forecast Division of JMA.



第5図-2　赤道域東西風指数(850ｈＰａ)時系列図

Fig.5-2 Time series of 850hPa zonal wind index averaged over the areas of 5°N-5°S, 160°E-175°W (top), 5°N-5°S, 170°W-135°W (middle), and 5°N-5°S, 130°W-100°W (bottom). Thin lines show the monthly mean and thick lines their 5-month running means. Positive anomalies are shaded.
Normals and standard deviations are computed from 1979-1990 base periods.
Data sources are the Long-range Forecast Division of JMA.

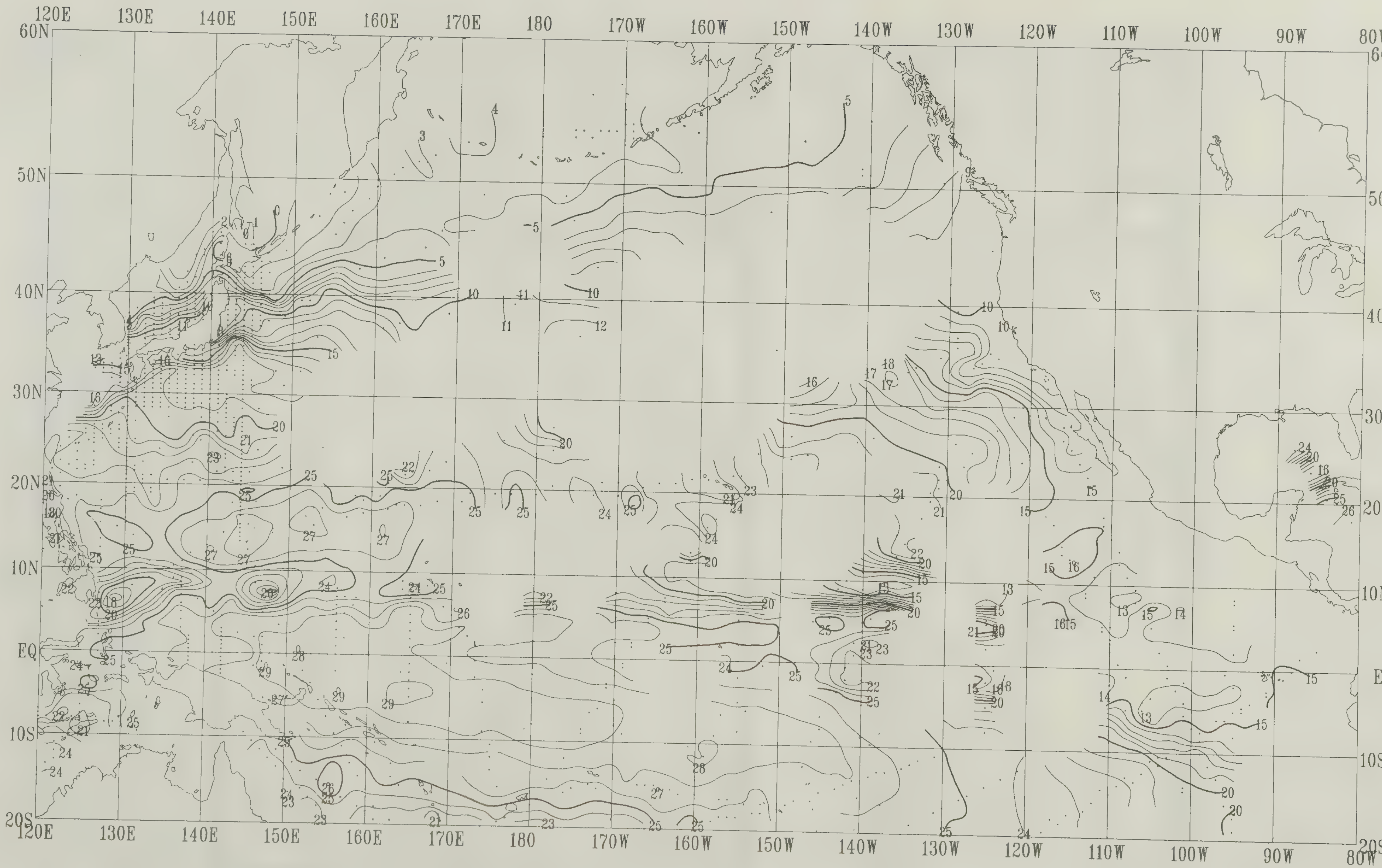
SST & Anomalies in the Global Ocean



第6図　全球月平均海面水温図（上）及び偏差図（下）（1996年 2月）

Fig.6 Monthly mean sea surface temperature over the global ocean (top) and anomalies (bottom) for FEB 1996. Anomalies are computed from the JMA climatology (1961-1990) (Marine Department of JMA, 1991, Climatic charts of sea surface temperatures of the western North Pacific and the global ocean). Contour interval is 1°C (top) and additional anomaly contours of ±0.5°C are shown as thin lines. Negative anomalies are spotted. Maximum coverage of sea ice is shaded. Data sources for sea ice are U.S. National Ice Center (polar regions) and JMA (the Sea of Okhotsk).

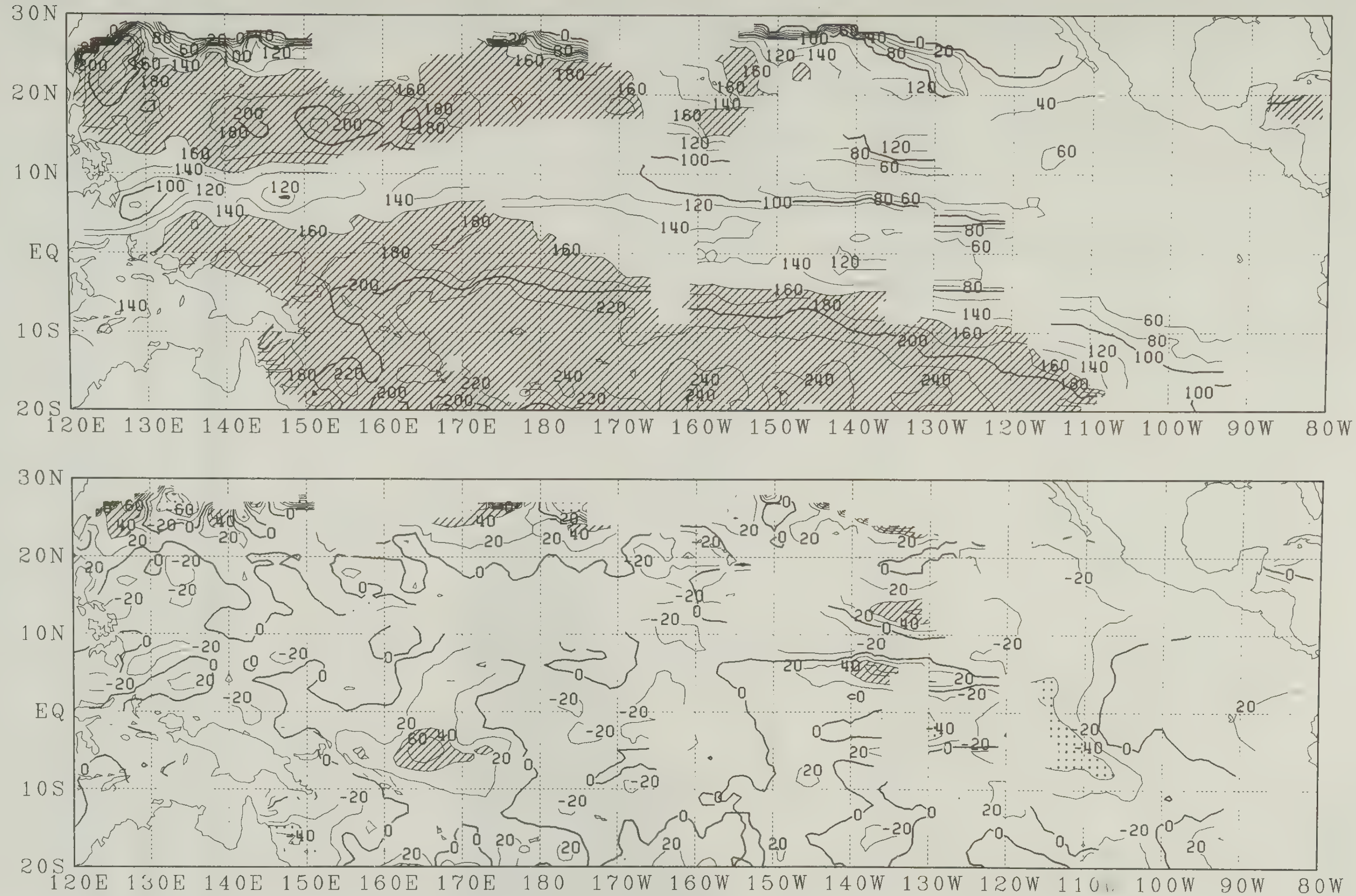
100m Temperature in the Pacific Ocean



第7図　太平洋表層水温(深さ100m)図 (1996年 2月)

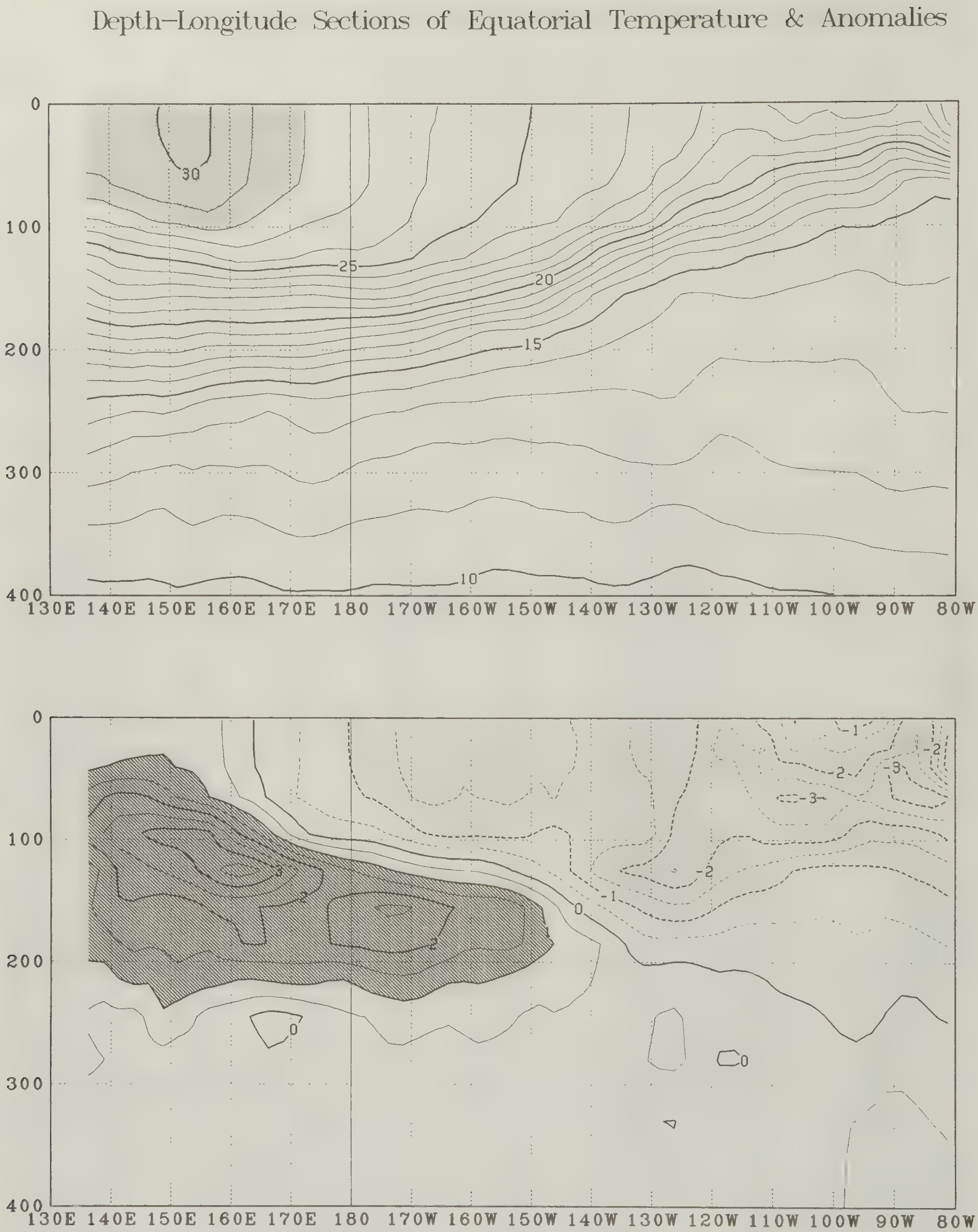
Fig.7 Subsurface (100m) temperatures in the Pacific Ocean for FEB 1996.
Contour interval is 1°C. Observation points are denoted by dots.

Depth of 20C & Anomalies in the Pacific Ocean



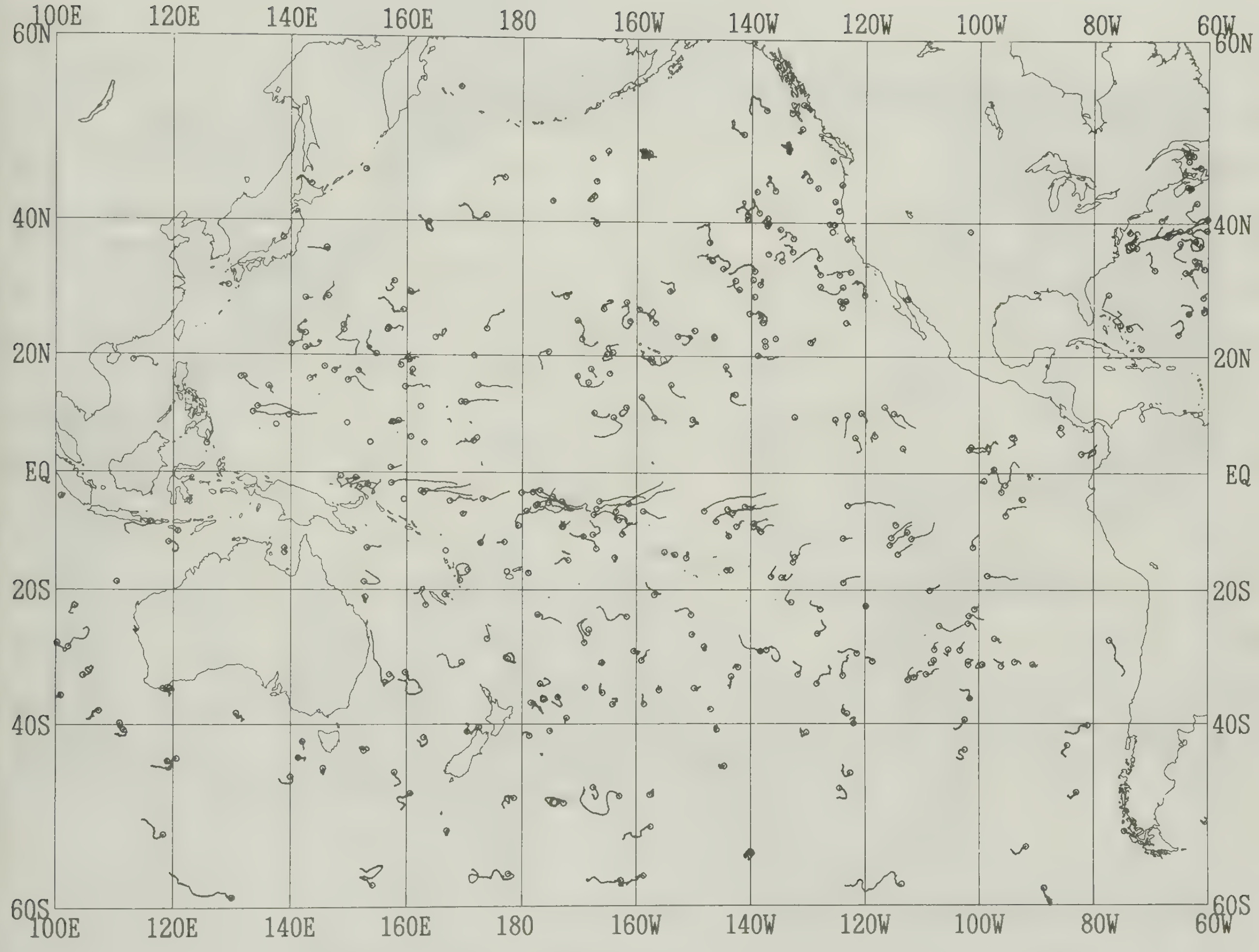
第8図　太平洋表層水温（20℃深度）図（上）及び偏差図（下）（1996年 2月）

Fig.8 Depth of the 20°C isotherm in the Pacific Ocean (top) and anomalies (bottom) for FEB 1996. Anomalies are computed from the climatology (Levitus, 1982, Climatological Atlas of the World Ocean, NOAA). Contour interval is 20m. Values greater than 160m in top panel are shaded. In bottom panel values greater than +40m are shaded and values less than -40m are spotted.



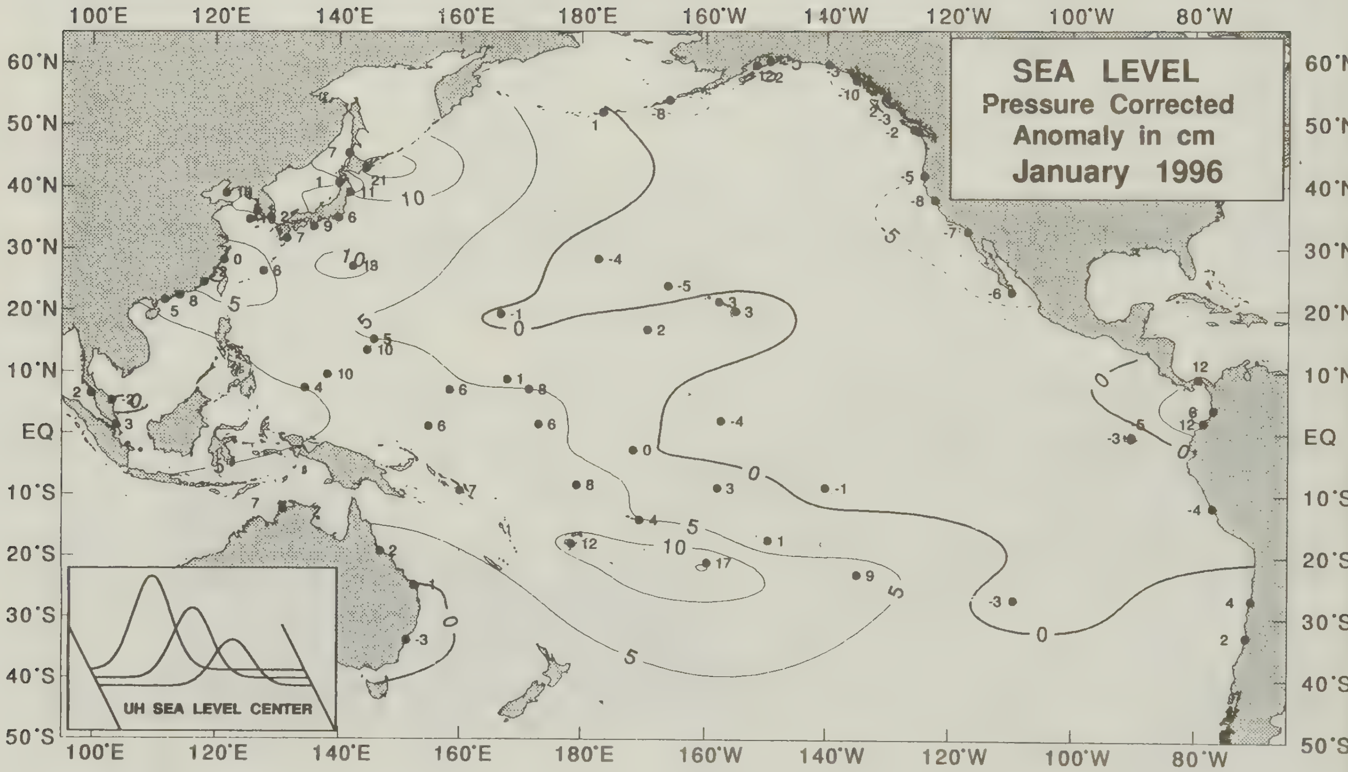
第9図　太平洋赤道に沿う表層水温（上）及び偏差（下）の深度－経度断面図（1996年 2月）

Fig.9 Depth-longitude sections of temperature (top) and anomalies (bottom) along the equator in the Pacific Ocean for FEB 1996. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (top) and 0.5°C (bottom). Values greater than 28°C in top panel are shaded. In bottom panel values greater than 1°C are shaded and values less than -1°C are spotted. Anomalies are computed from 1987-1994 base period means.



第10図　太平洋ブイ流跡図(1996年 2月)

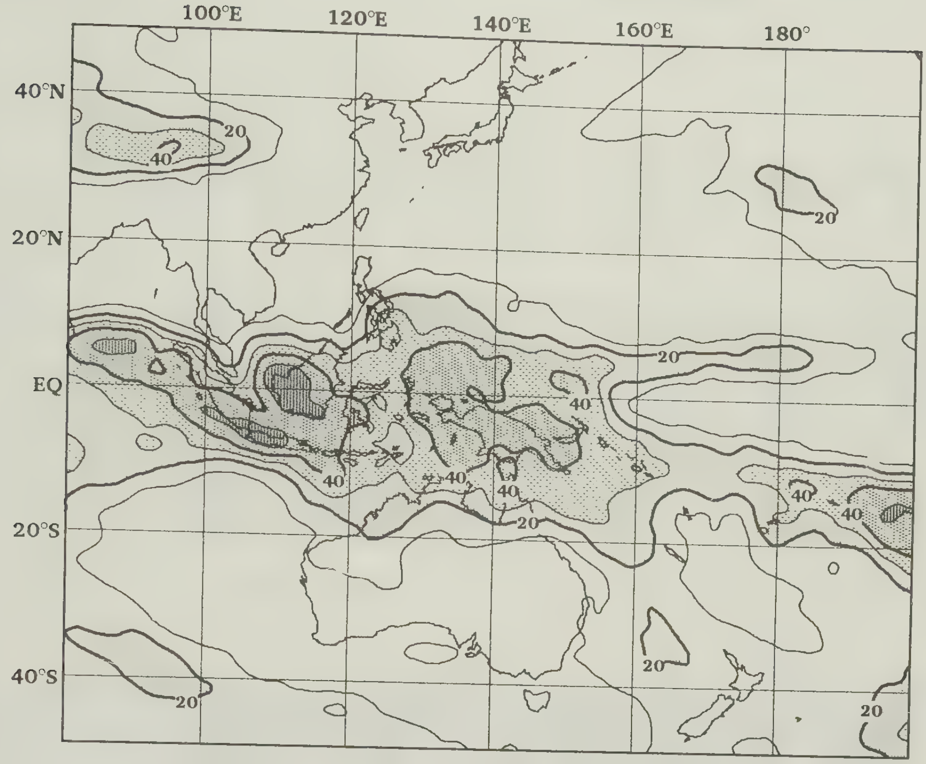
Fig.10 Movements of drifting buoys in the Pacific Ocean during FEB 1996. Each track is for one buoy. Small circles represent last positions for the month.

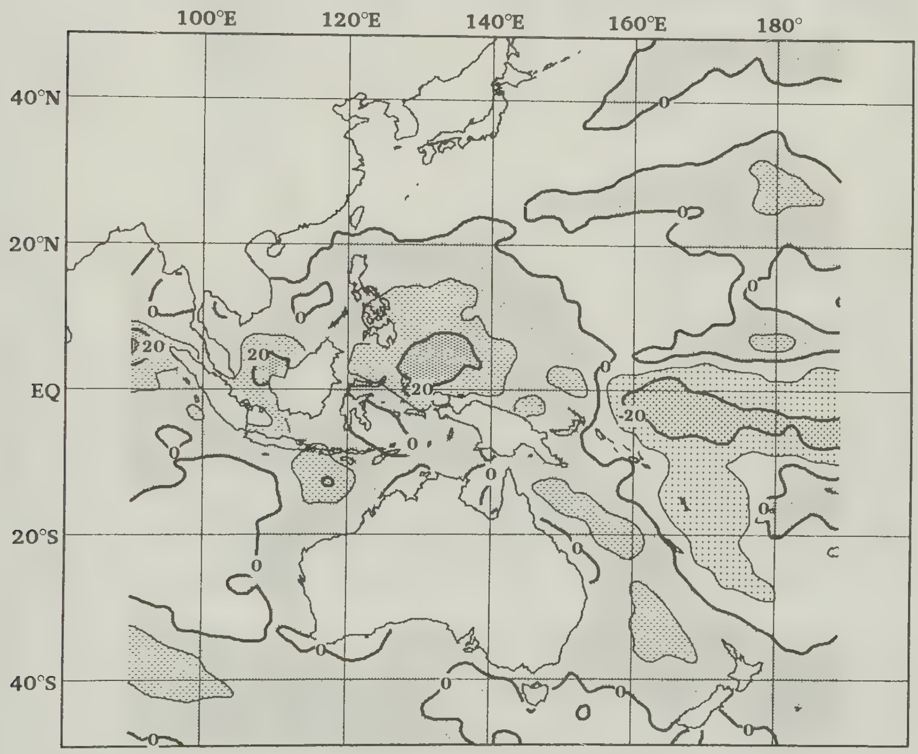


第11図　太平洋海面水位偏差図（ 1996年 1月 ）

Fig.11　Monthly sea level anomalies for JAN 1996 obtained from mean sea level (1975−1986) adjusted for atmospheric pressure.
This figure is prepared by the SOC of ISLP−PAC, Dept. of Oceanography, Univ. of Hawaii.

High-Cloud Amount & Anomalies

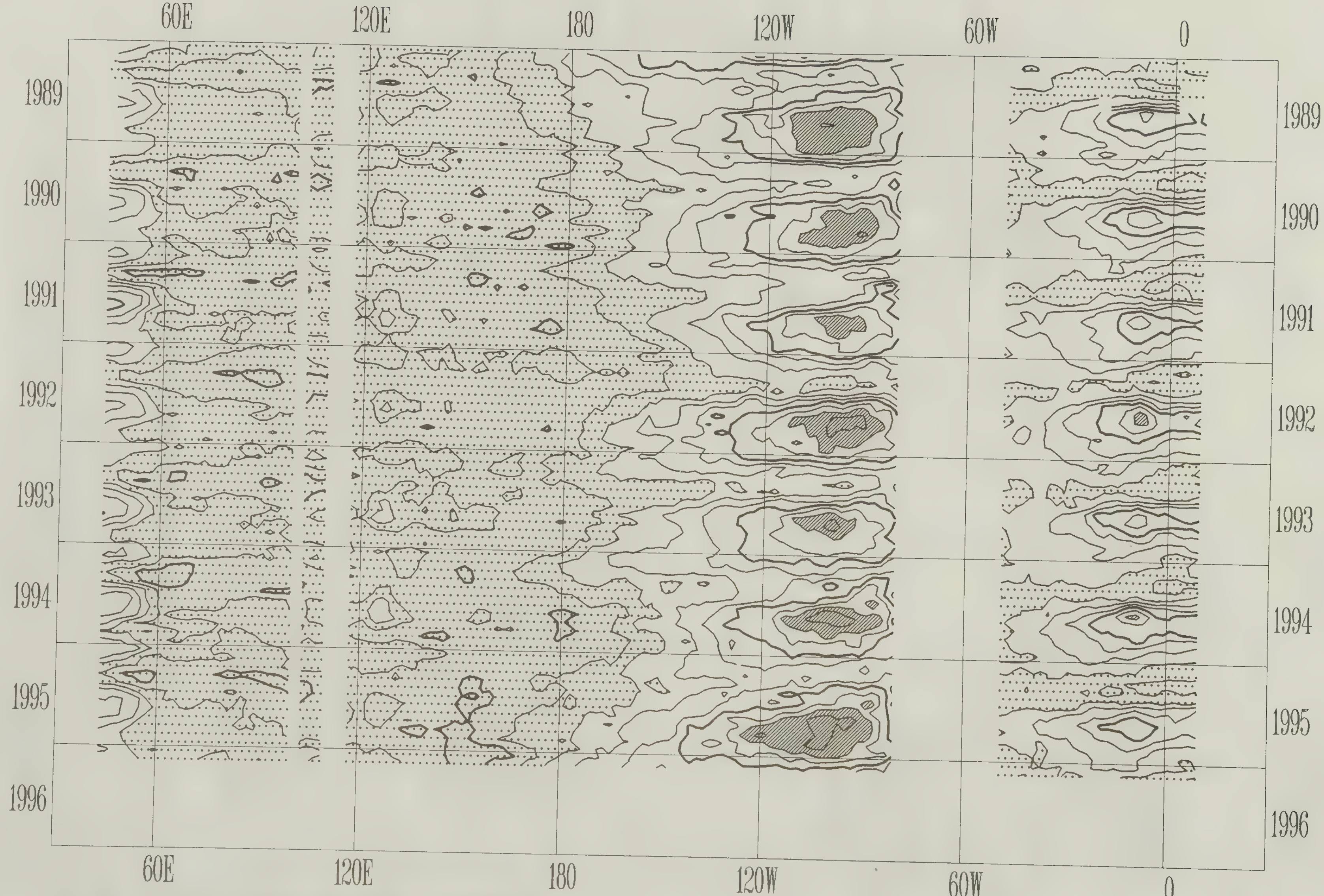




第12図　西太平洋月平均上層雲量分布図及び偏差図 (1996年 2月)

Fig.12 Monthly mean of the high-cloud amount (%, top) and its anomalies (%, bottom) in the western Pacific for FEB 1996. Contour interval is 10%. Areas above 30% are shaded (top) and positive anomalies are stippled (bottom). Anomalies are computed from 1978-1990 base period means. Figures are prepared by the Long-range Forecast Division of JMA.

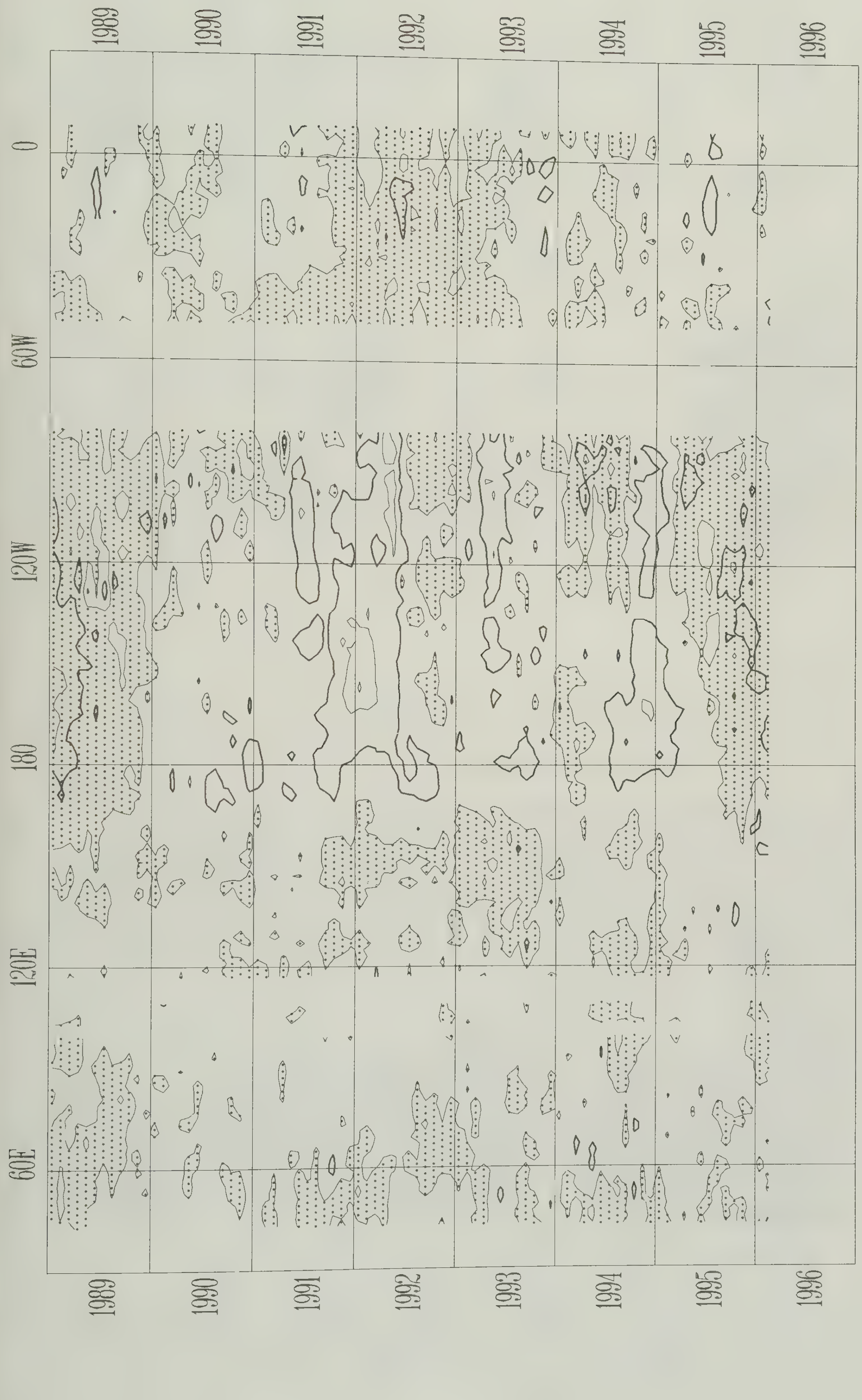
Time-Longitude Section of SST



第13図　赤道に沿う海面水温の時間－経度断面図

Fig.13 Time-longitude section of SSTs along the equator (2°N-2°S) in the global ocean.　Contour interval is 1°C, with thick contour lines at 25 and 30°C. SST values greater than 28°C are spotted and values less than 23°C are shaded.

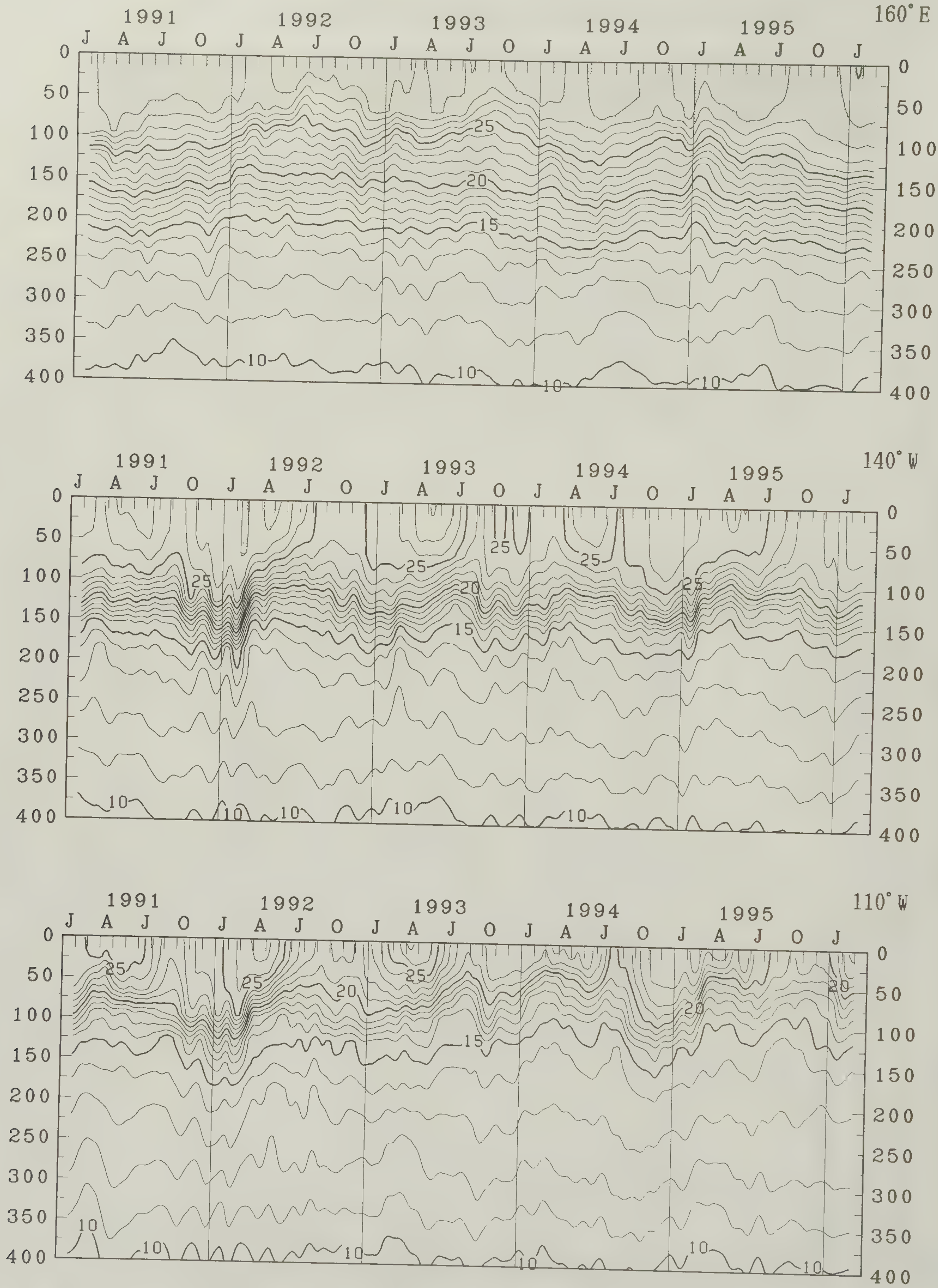
Time-Longitude Section of SST Anomalies



第14図　赤道に沿う海面水温偏差の時間－経度断面図

Fig.14 Time-longitude section of SST anomalies along the equator (2°N-2°S) computed from the JMA climatology (1961-1990). Contour interval is 1°C, with thick contour lines at +1°C and -1°C. Negative anomalies are spotted.

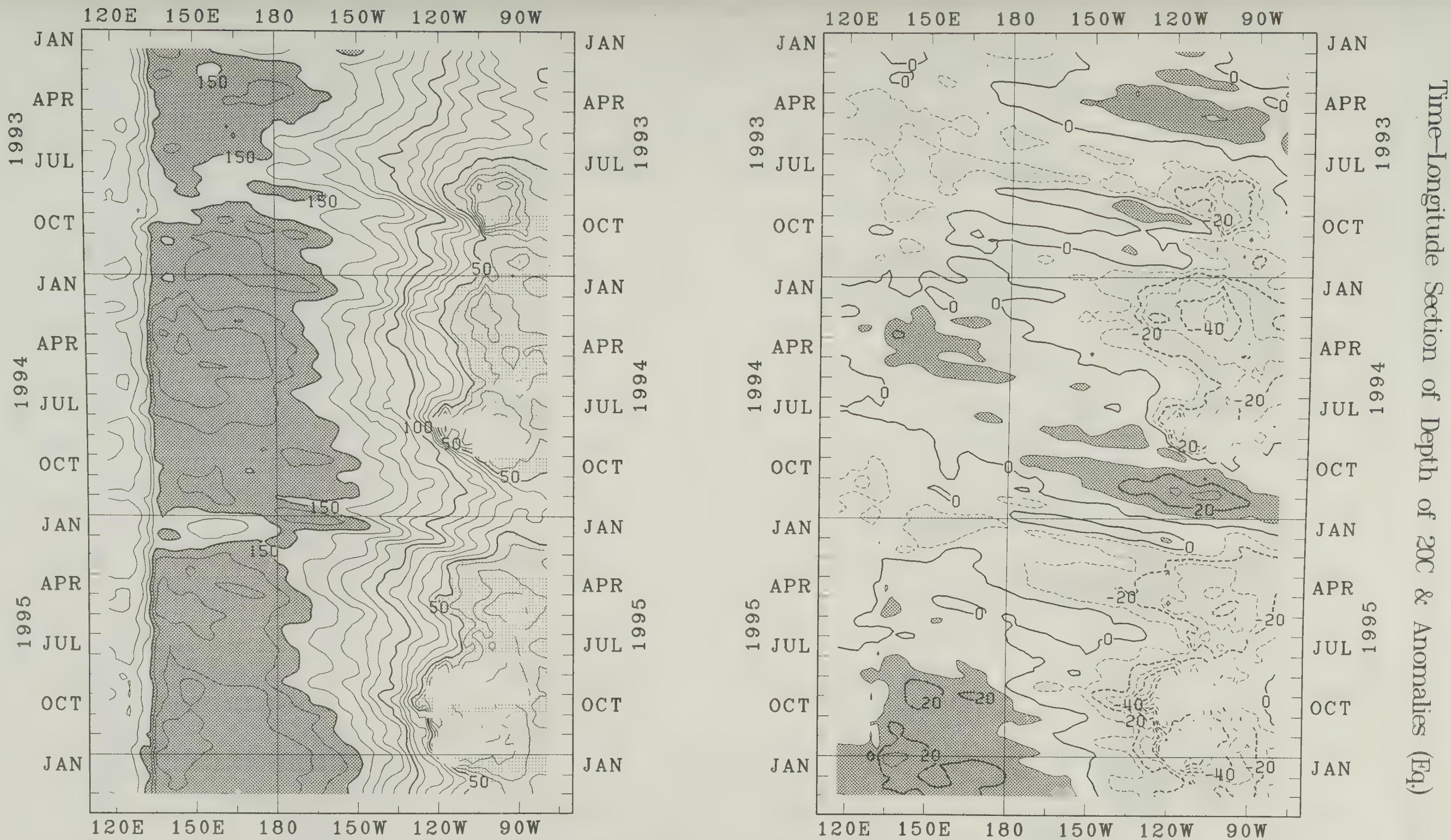
Time-depth Sections of Equatorial Subsurface Temperature



第15図　太平洋赤道域の表層水温の時間－深度断面図

（上：西部、中：中部、下：東部）

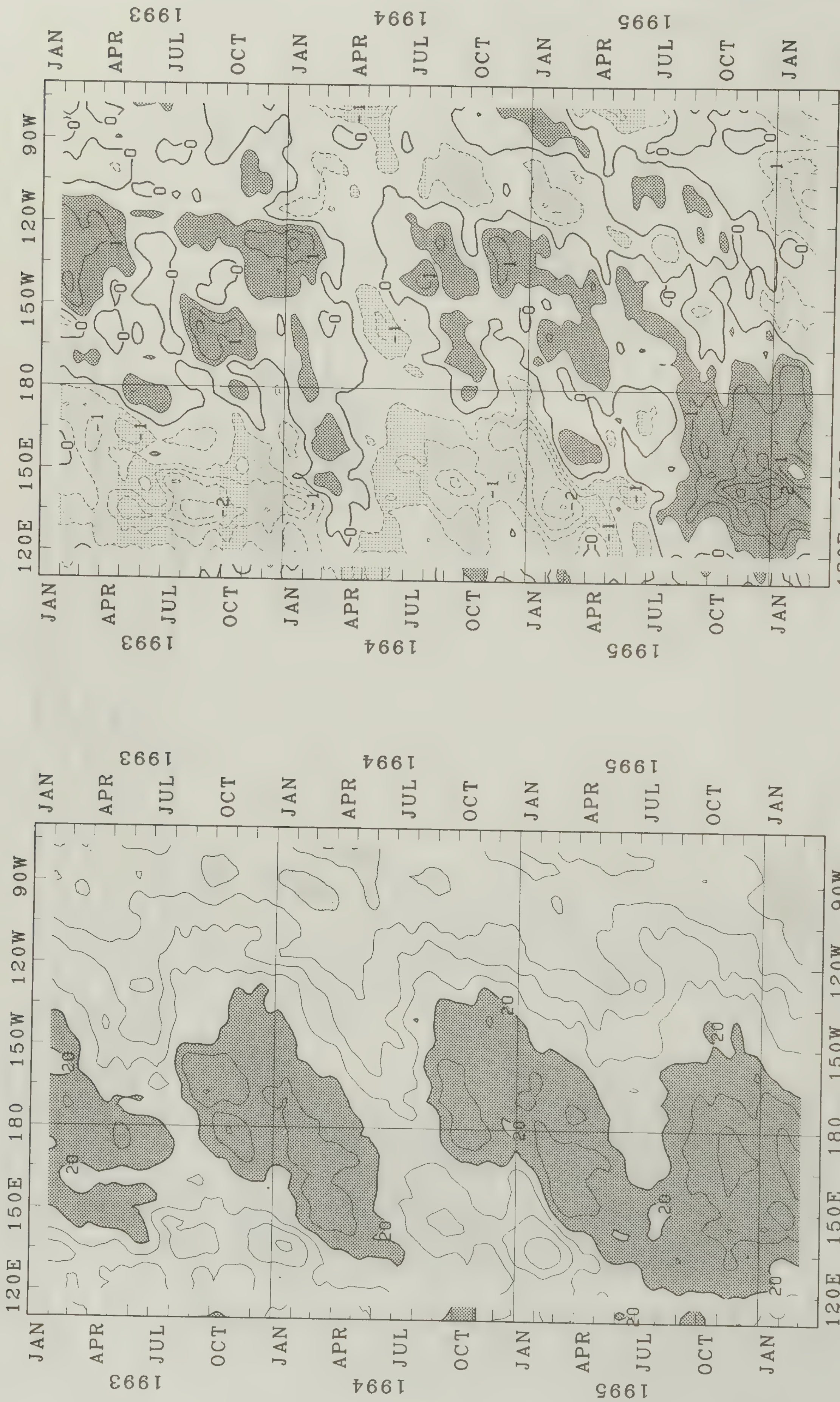
Fig.15 Time-depth sections of equatorial subsurface temperature for the western Pacific (top, 160°E), the central Pacific (middle, 140°W) and the eastern Pacific (bottom, 110°W). Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C. Values greater than 28°C are shaded.



第16図　太平洋の赤道に沿う20℃深度（左）及び偏差（右）の時間－経度断面図

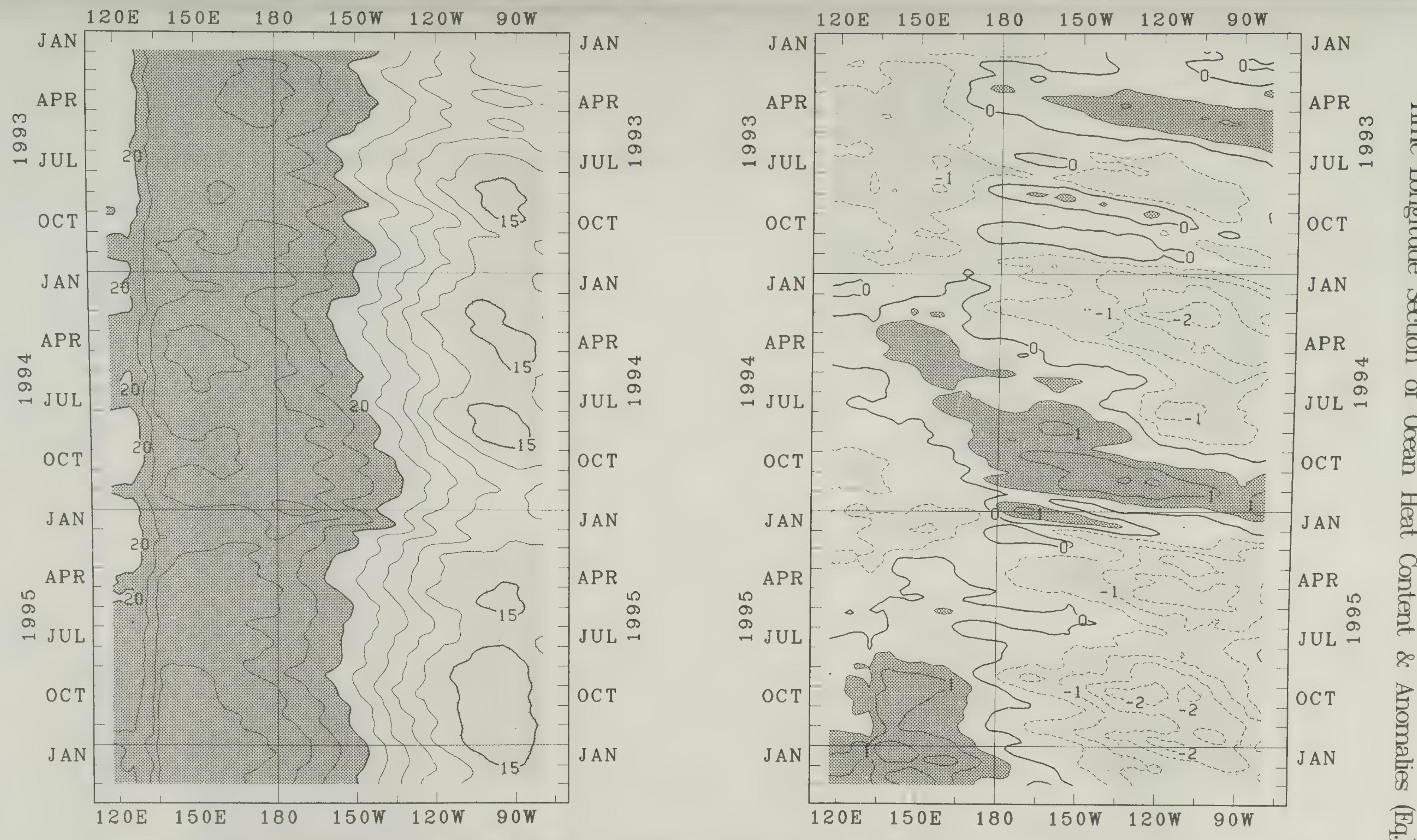
Fig.16 Time-longitude sections of depth of the 20°C isotherm along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 10m. Values in left panel greater than 150m are shaded and values less than 50m are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1994 base period means.

Time–Longitude Section of Ocean Heat Content & Anomalies (6N)



第17図 太平洋の北緯6度線に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

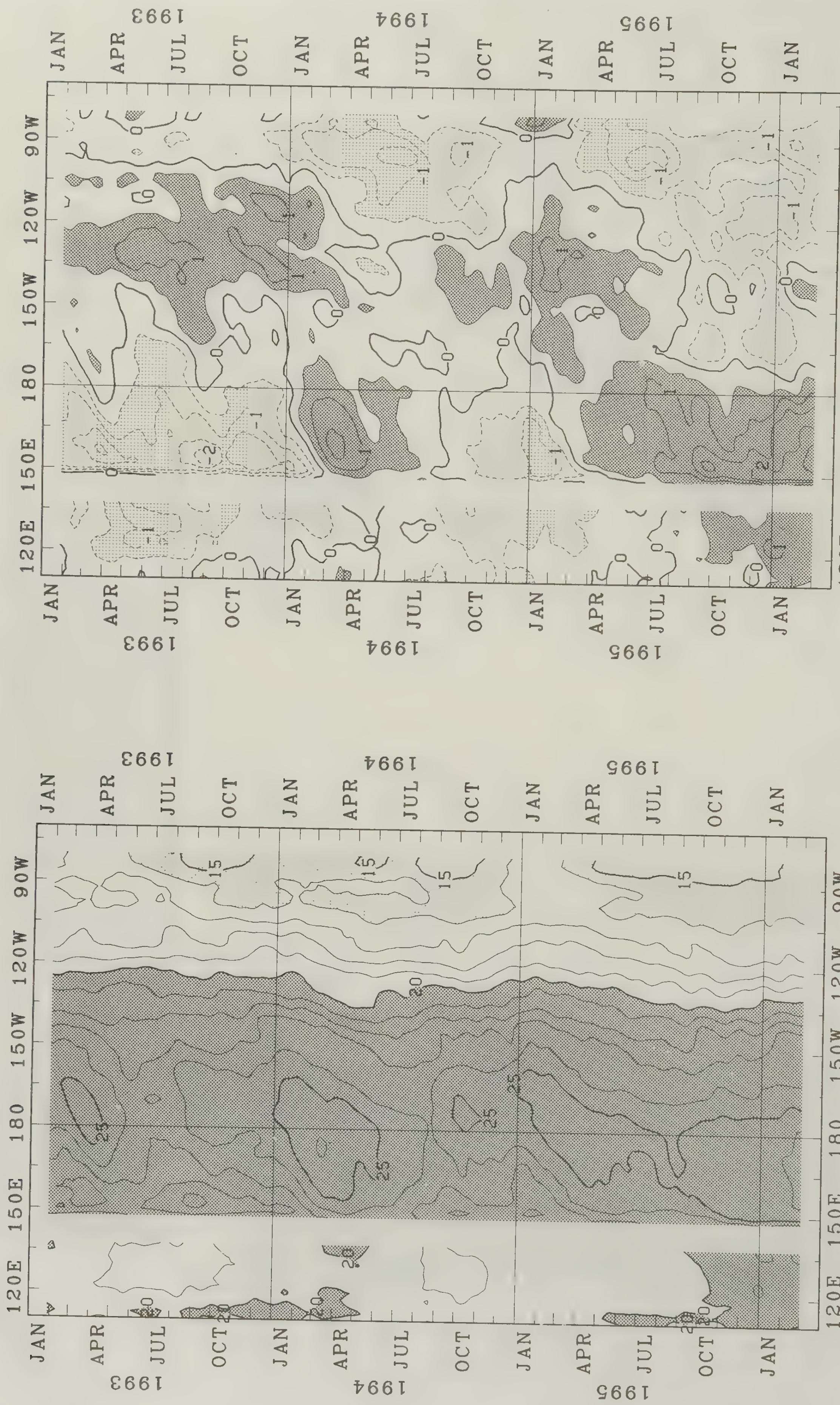
Fig.17 Time-longitude sections of ocean heat content in the upper 260m along 6°N (left) and anomalies (right) in the Pacific Ocean. Data are derived from an Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right). Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1994 base period means.



第18図　太平洋の赤道に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

Fig.18 Time-longitude sections of ocean heat content in the upper 260m along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right). Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1994 base period means.

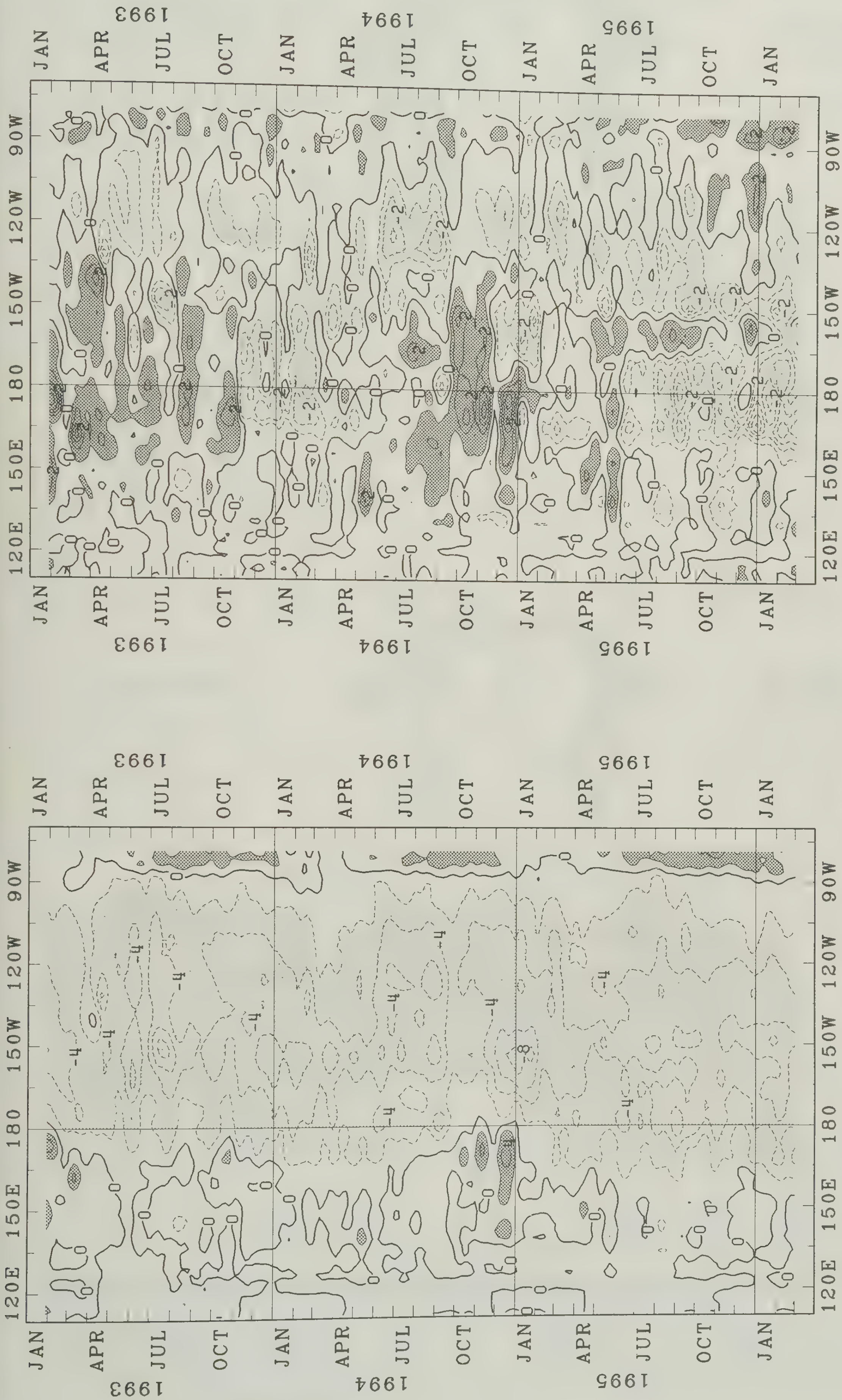
Time–Longitude Section of Ocean Heat Content & Anomalies (6S)



第19図　太平洋の南緯6度線に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

Fig.19 Time-longitude sections of ocean heat content in the upper 260m along 6°S (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right). Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1994 base period means.

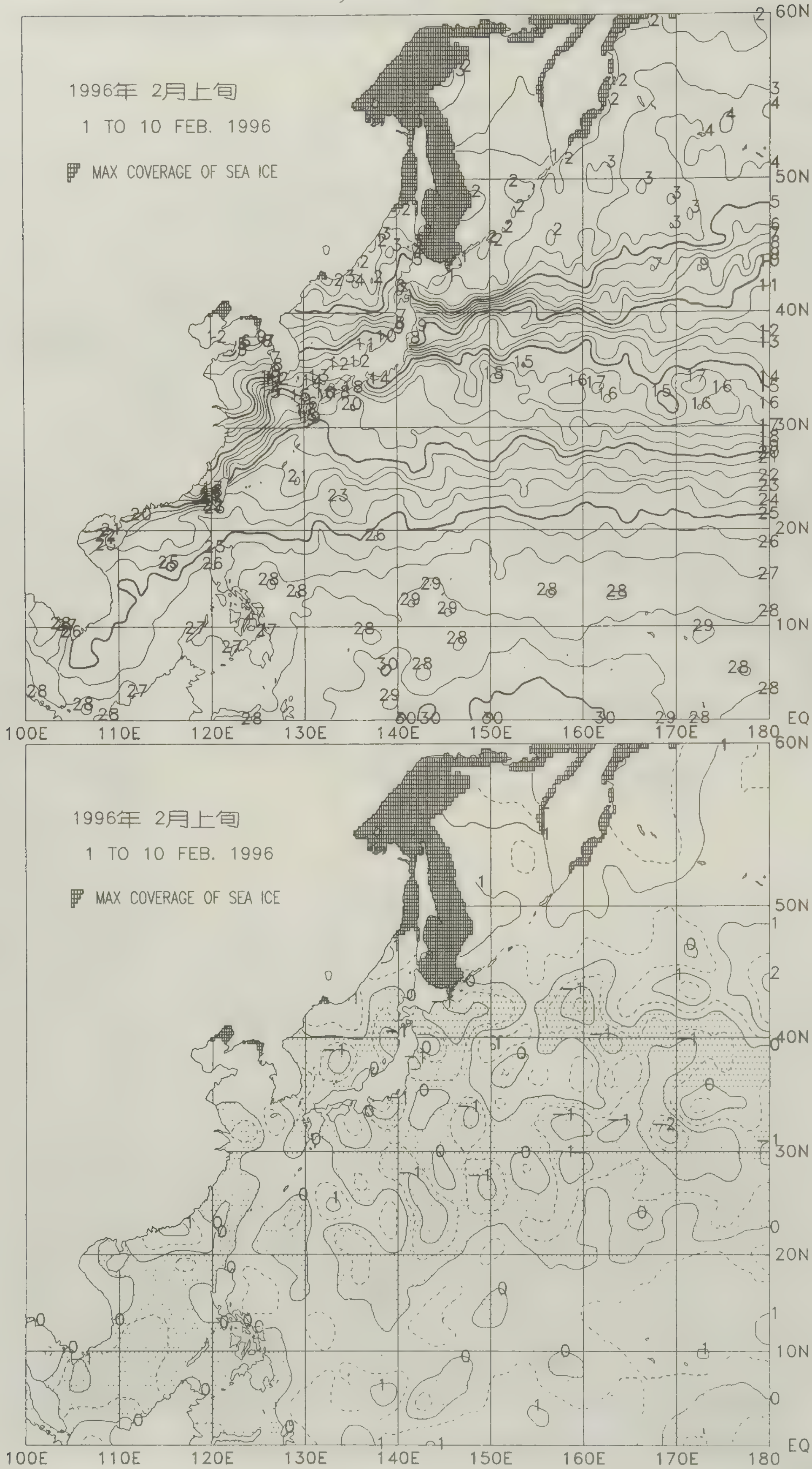
Time-Longitude Section of Surface Zonal Wind Stress & Anomalies (Eq.)



第20図 太平洋の赤道に沿う海面の風応力の東西成分（左）及び偏差（右）の時間－経度断面図

Fig.20 Time-longitude sections of surface zonal wind stress along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Atmospheric Global Data Assimilation System of JMA. Contour interval is 0.02N/m2 (left) and 0.01N/m2 (right). Dashed contours indicate easterlies (left) and easterly anomalies (right). Anomalies are computed from 1987-1994 base period means.

Ten-day mean SST & Anomalies



旬平均沿岸水温(℃)

Coastal Water Temperature

地点名 (Index Number)	水温 Temp.	偏差 Anom.
石垣島(47918)	21.3	+1.0
御前崎(47655)	9.4	−1.1
八丈島(47678)	15.2	−1.5
小名浜(47598)	7.7	−2.0
宮　古(47585)	7.2	−0.2
江　差(47428)	3.6	-
浜　田(47755)	9.9	-

海洋気象ブイロボット

旬平均海面水温(℃)

Ocean Data Buoy SST

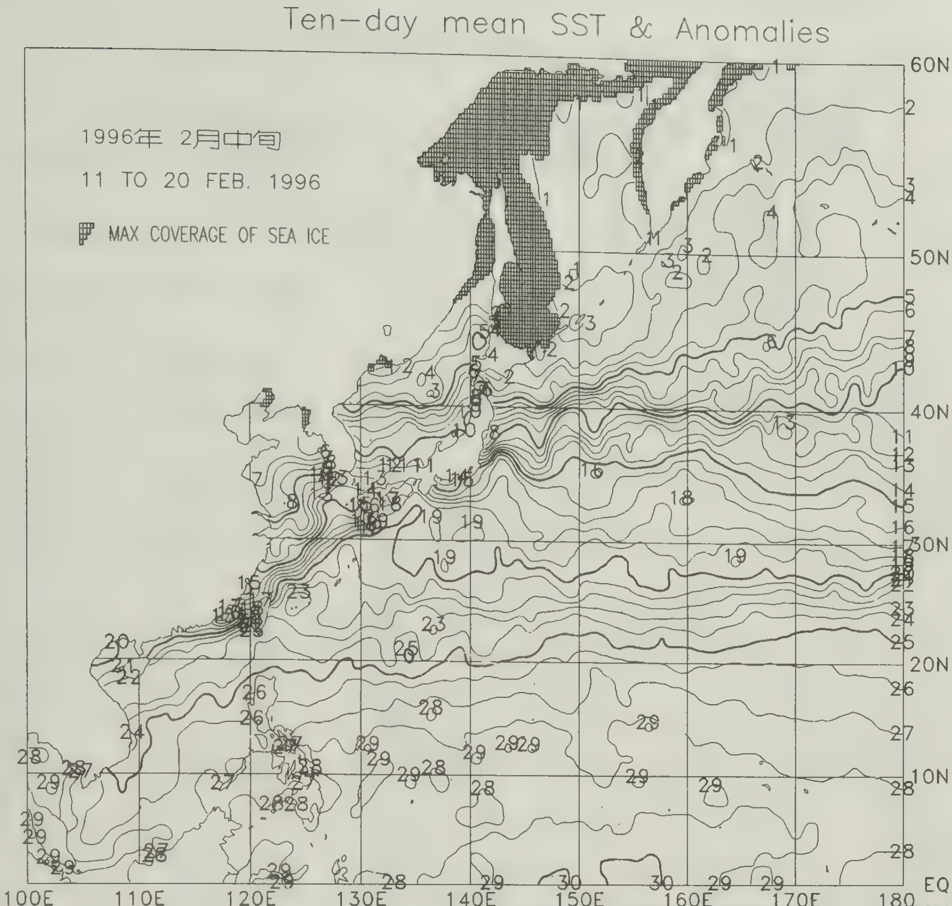
日本海 37.9N,134.5E
9.6

四国沖 29.0N,135.0E
19.0

東シナ海 28.2N,126.3E
19.7

第21図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年 2月上旬)

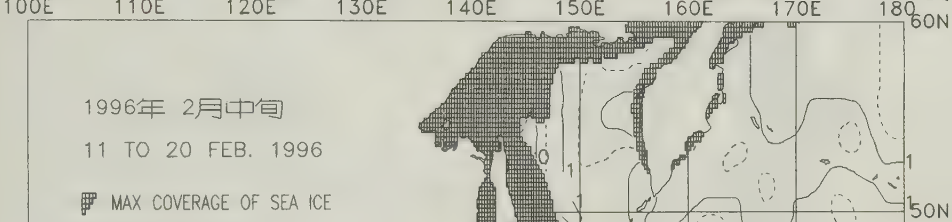
Fig.21 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 1st ten-day period in FEB 1996. Anomalies are computed from the JMA climatology (1961-90). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.



旬平均沿岸水温(℃)

Coastal Water Temperature

地点名 (Index Number)	水温 Temp.	偏差 Anom.
石垣島 (47918)	22.1	+1.3
御前崎 (47655)	11.0	+0.3
八丈島 (47678)	15.9	−1.0
小名浜 (47598)	7.5	−2.1
宮　古 (47585)	6.9	+0.1
江　差 (47428)	4.6	
浜　田 (47755)	11.6	-



海洋気象ブイロボット

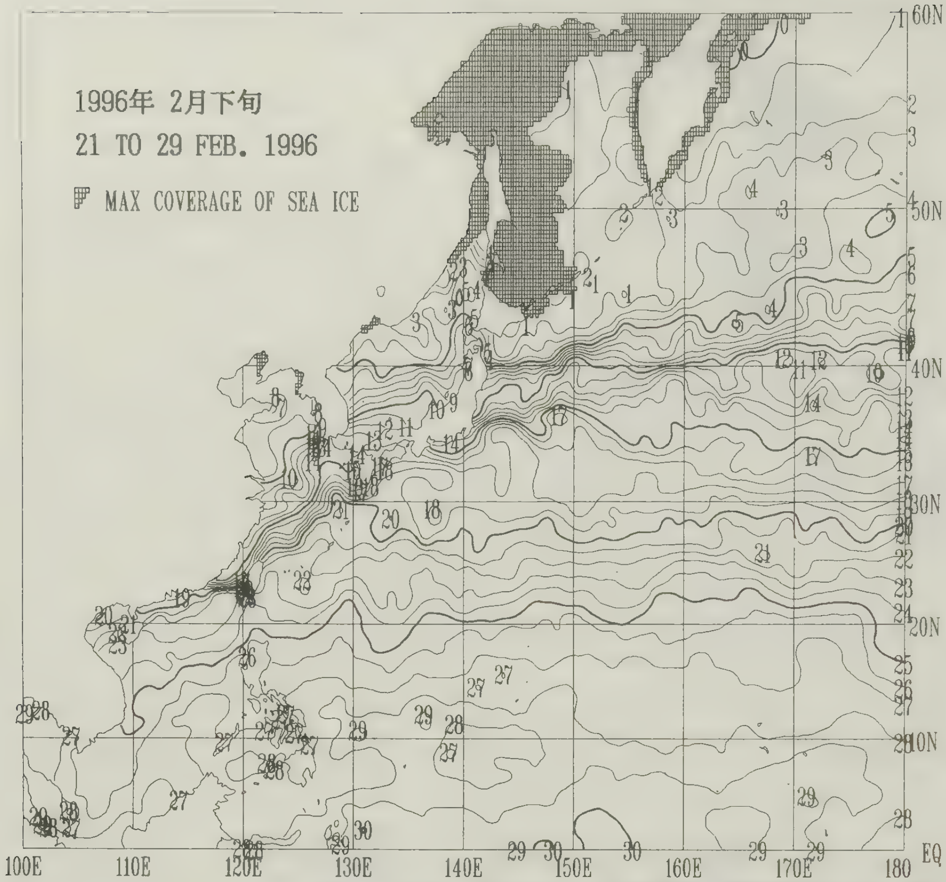
旬平均海面水温(℃)

Ocean Data Buoy SST

日本海	37.9N,134.5E	9.1
四国沖	29.0N,135.0E	19.4
東シナ海	28.2N,126.3E	19.6

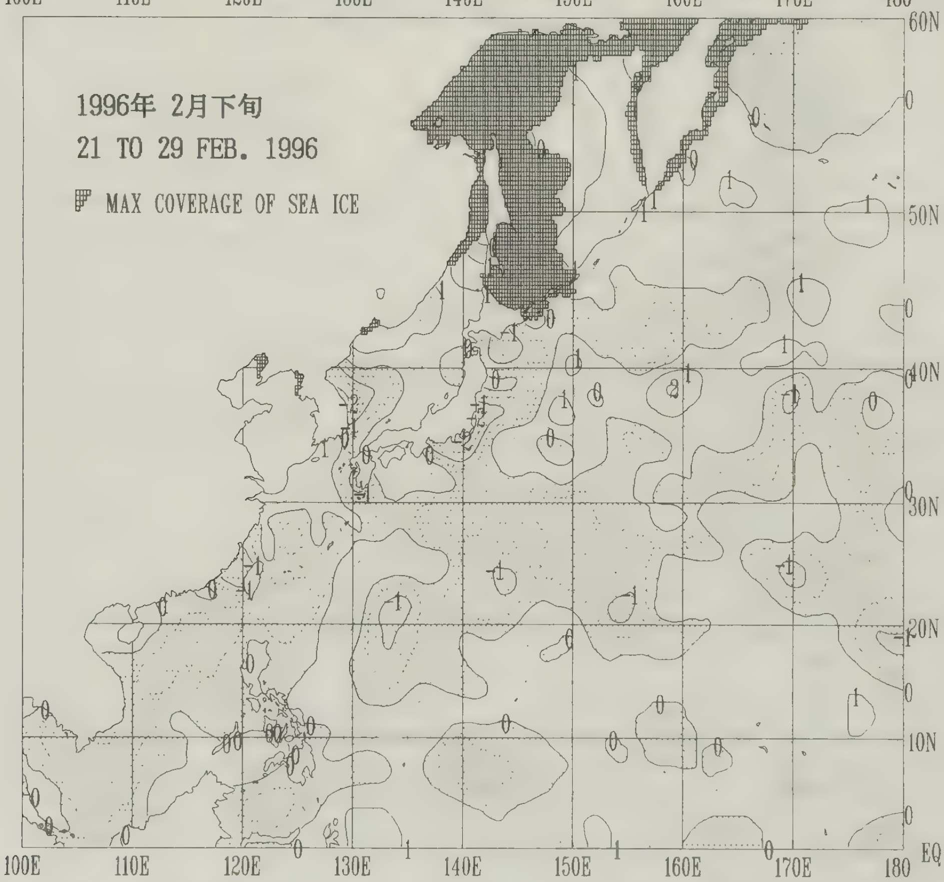
第22図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年 2月中旬)

Fig.22 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 2nd ten-day period in FEB 1996. Anomalies are computed from the JMA climatology (1961–90). Contour interval is 1° C and additional anomaly contours of 0.5° C are shown as broken lines. Negative anomalies are spotted.



旬平均沿岸水温(℃)
Coastal Water Temperature

地点名 (Index Number)	水温 Temp.	偏差 Anom.
石垣島(47918)	21.2	+0.3
御前崎(47655)	9.8	-1.2
八丈島(47678)	17.6	+0.8
小名浜(47598)	7.0	-2.1
宮　古(47585)	5.1	-0.9
江　差(47428)	3.4	-
浜　田(47755)	10.7	-

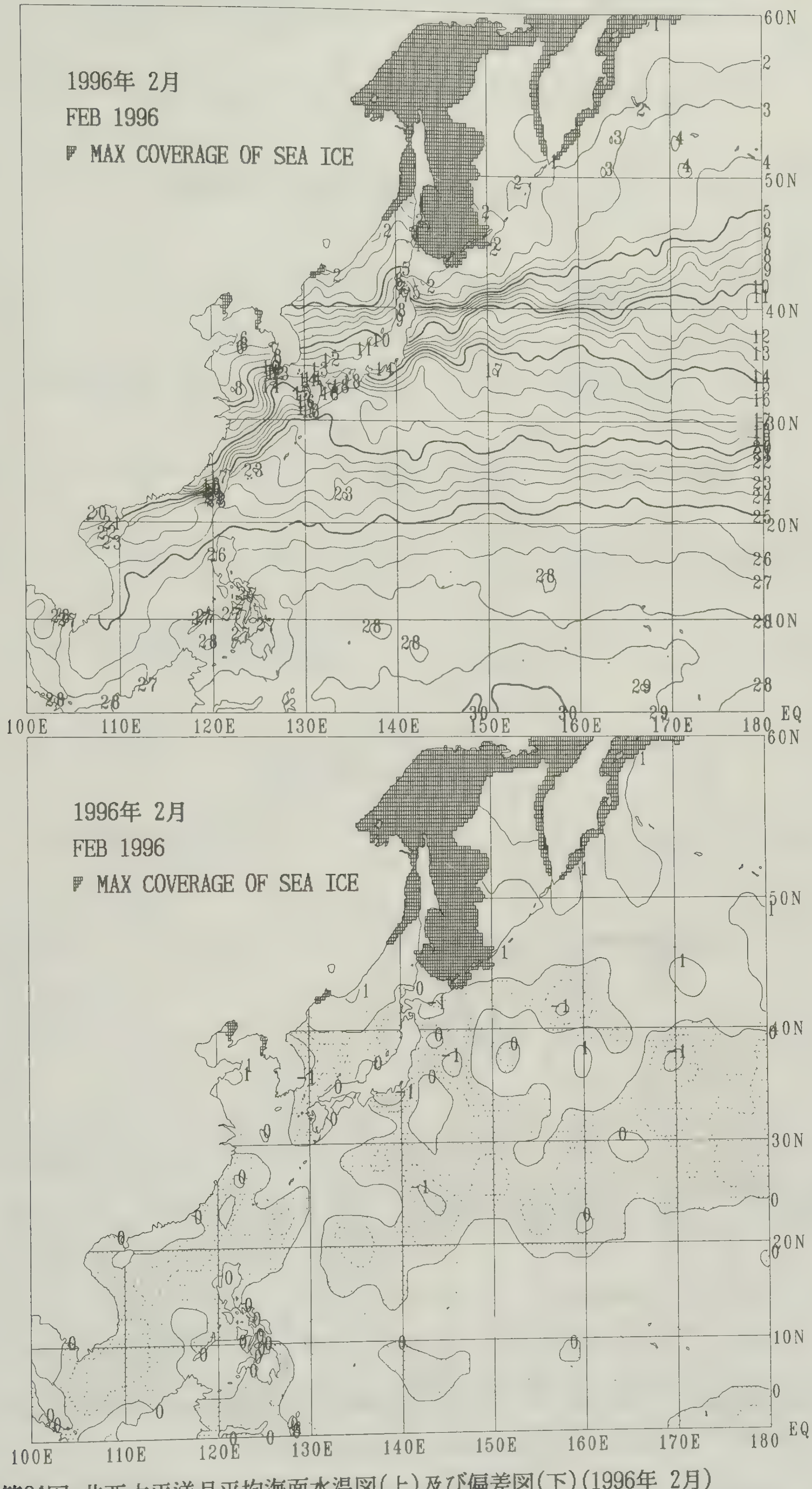


海洋気象ブイロボット
旬平均海面水温(℃)
Ocean Data Buoy SST

日 本 海 37.9N,134.5E
9.8
四 国 沖 29.0N,135.0E
19.0
東シナ海 28.2N,126.3E
21.2

第23図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年 2月下旬)

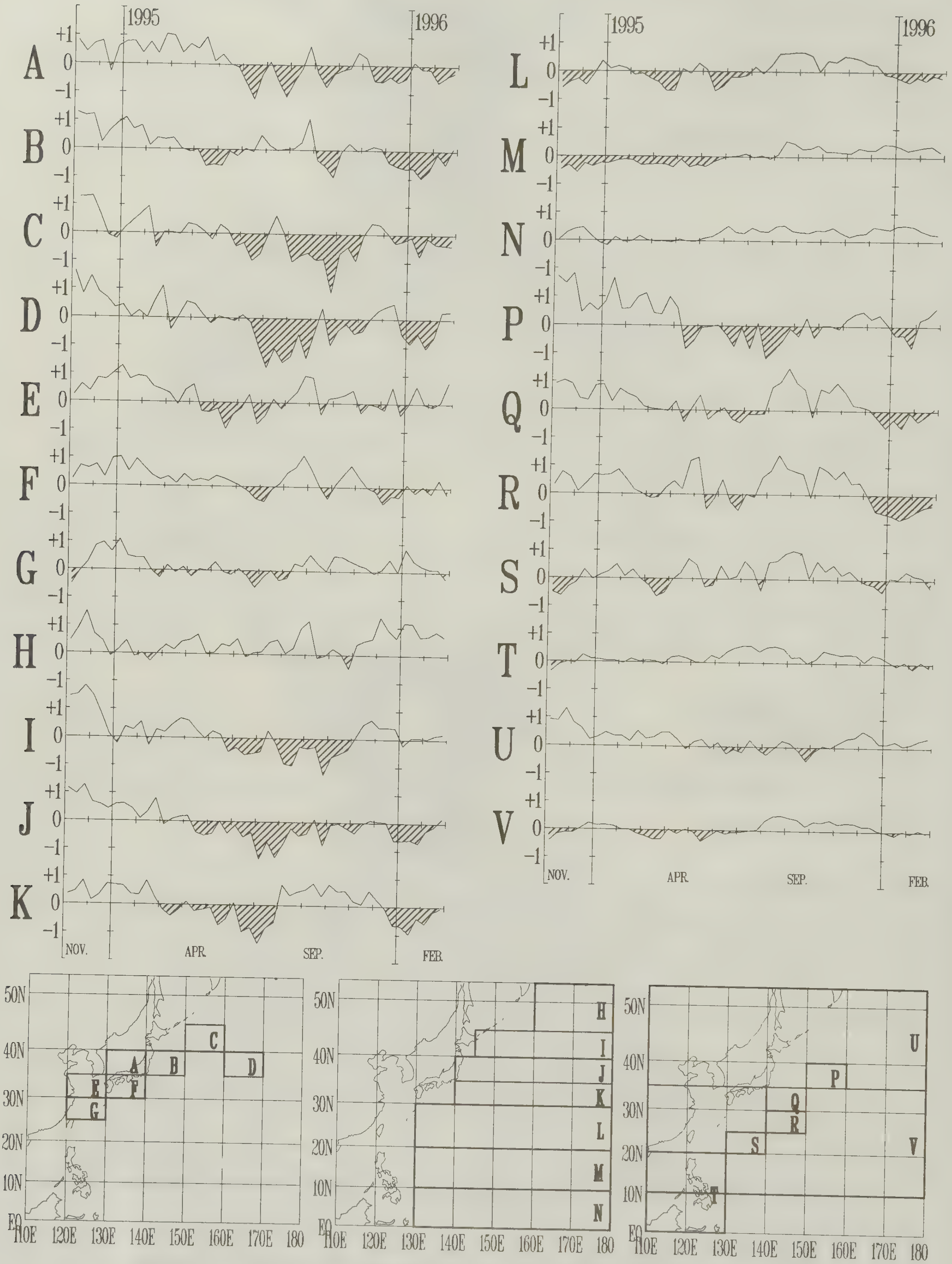
Fig.23 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 3rd ten-day period in FEB 1996. Anomalies are computed from the JMA climatology (1961-90). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.



第24図 北西太平洋月平均海面水温図(上)及び偏差図(下)(1996年 2月)

Fig.24 Monthly mean SSTs in the western North Pacific (top) and anomalies (bottom) for FEB 1996. Anomalies are computed from the JMA climatology (1961-1990). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.

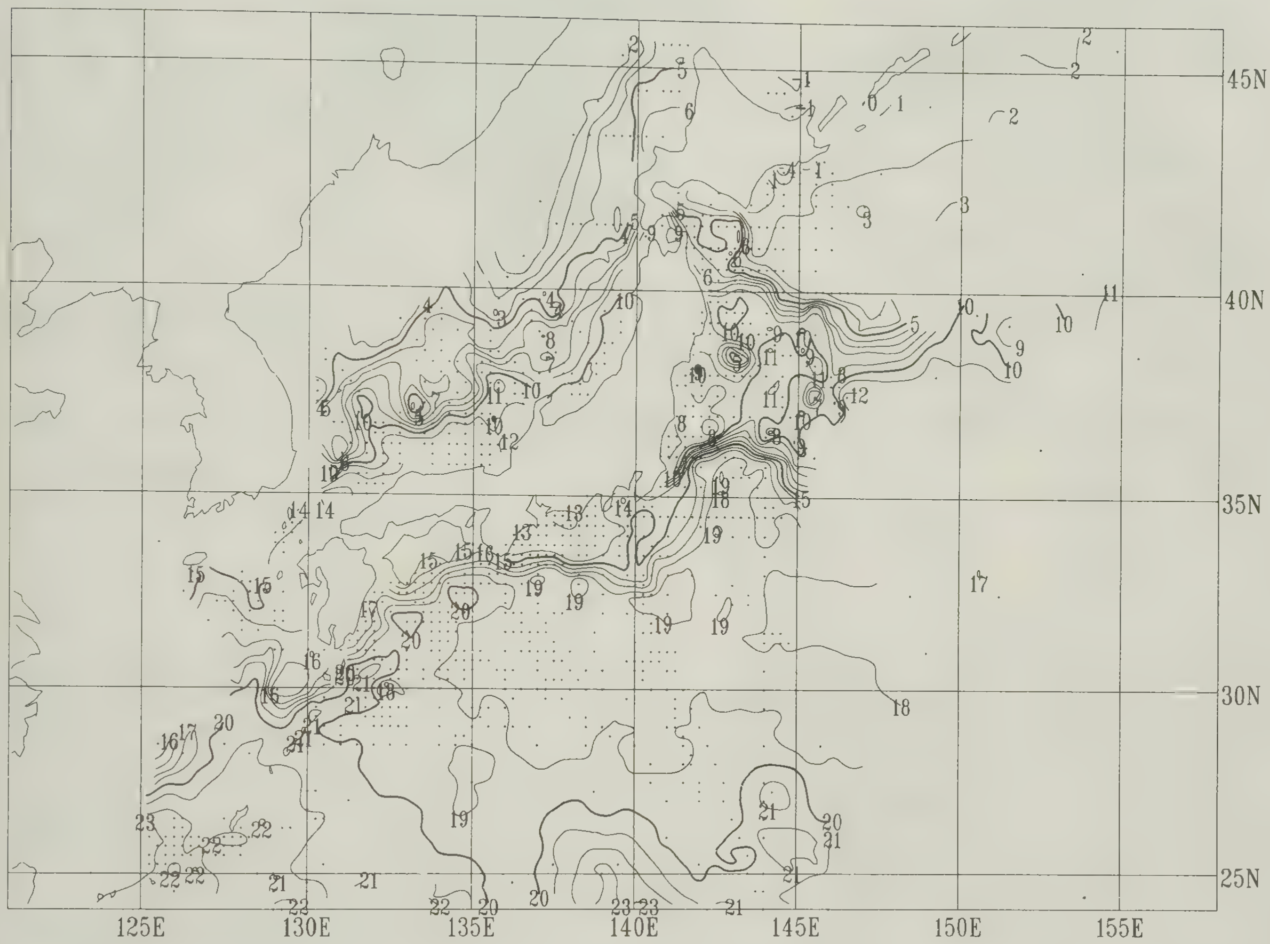
Time Series of Area Mean SST in the Western North Pacific



第25図　北西太平洋旬平均海面水温平年偏差時系列図

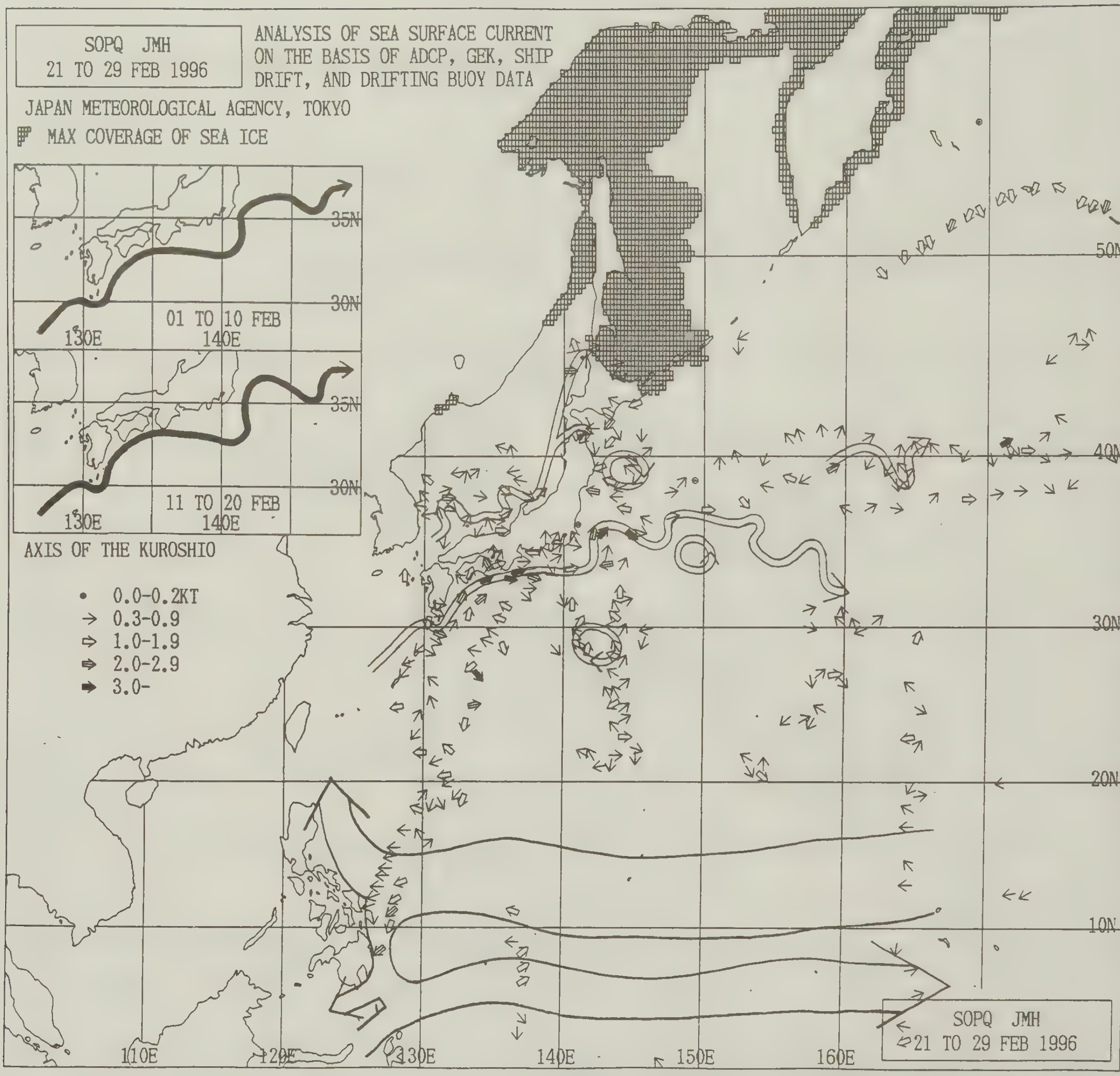
Fig.25 Time series of the ten-day mean sea surface temperature anomalies (°C) in the western North Pacific for the areas indicated at the bottom. Negative anomalies are shaded. Anomalies are computed from the JMA climatology (1961-90).

100m Temperatures in Seas Adjacent to Japan



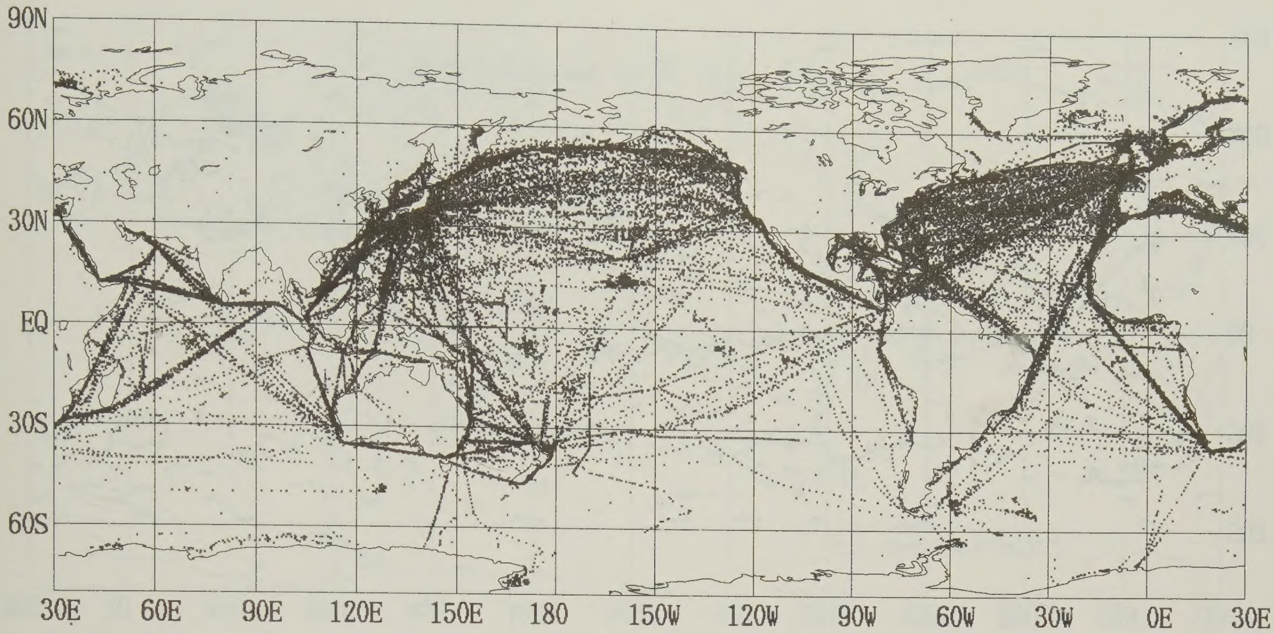
第26図　日本近海表層水温(深さ100m)図 (1996年 2月)

Fig.26 Subsurface (100m) temperatures in seas adjacent to Japan for FEB 1996. Contour interval is 1°C. Observation points are denoted by dots.

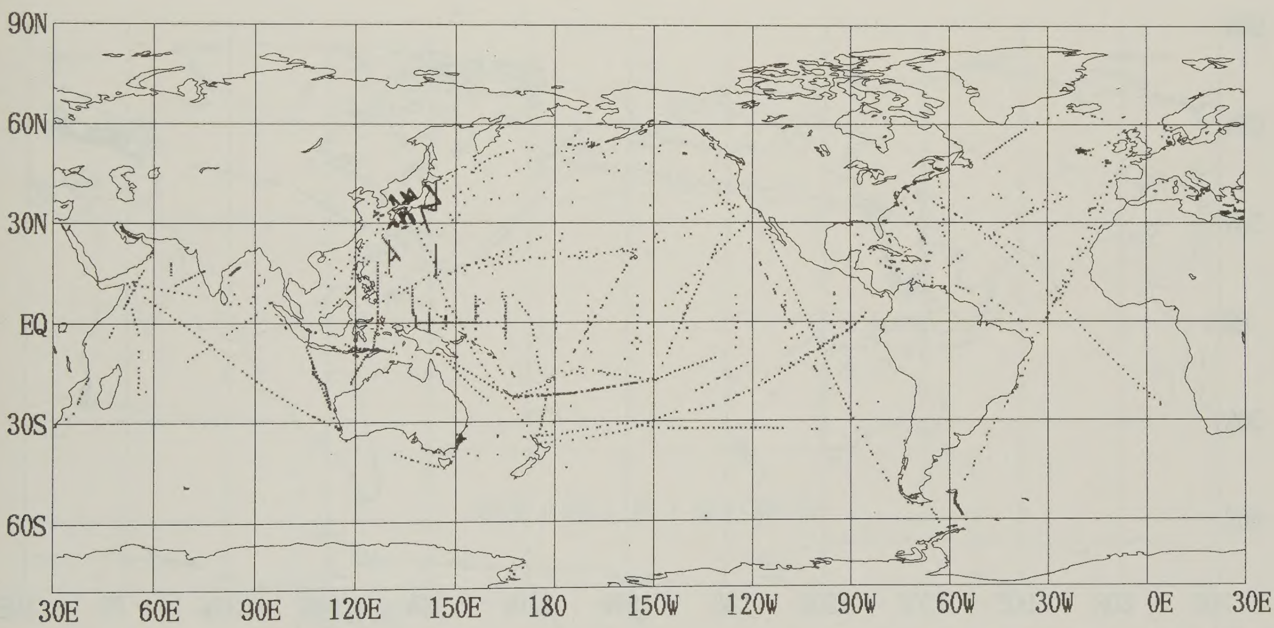


第27図　北西太平洋海流図（1996年 2月下旬）

Fig.27 Analysis of the sea surface current in the western North Pacific for the 3rd ten-day period in FEB 1996. Small arrows indicate sea surface currents measured with acoustic Doppler current profilers, GEKs deployed in research vessels, and ship drift by merchant ships/drifting buoys during the month. Major currents such as the Kuroshio and the North Equatorial Current are denoted by larger open arrows.



SHIP messages Total data: 98681

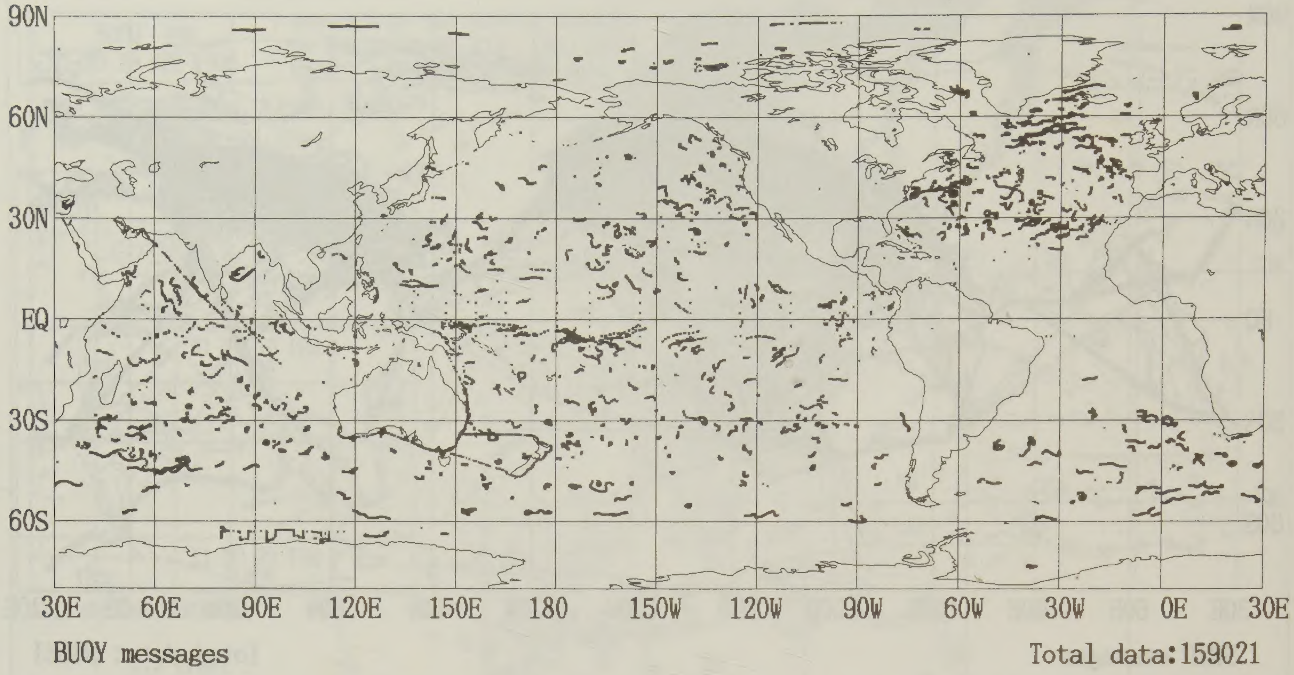


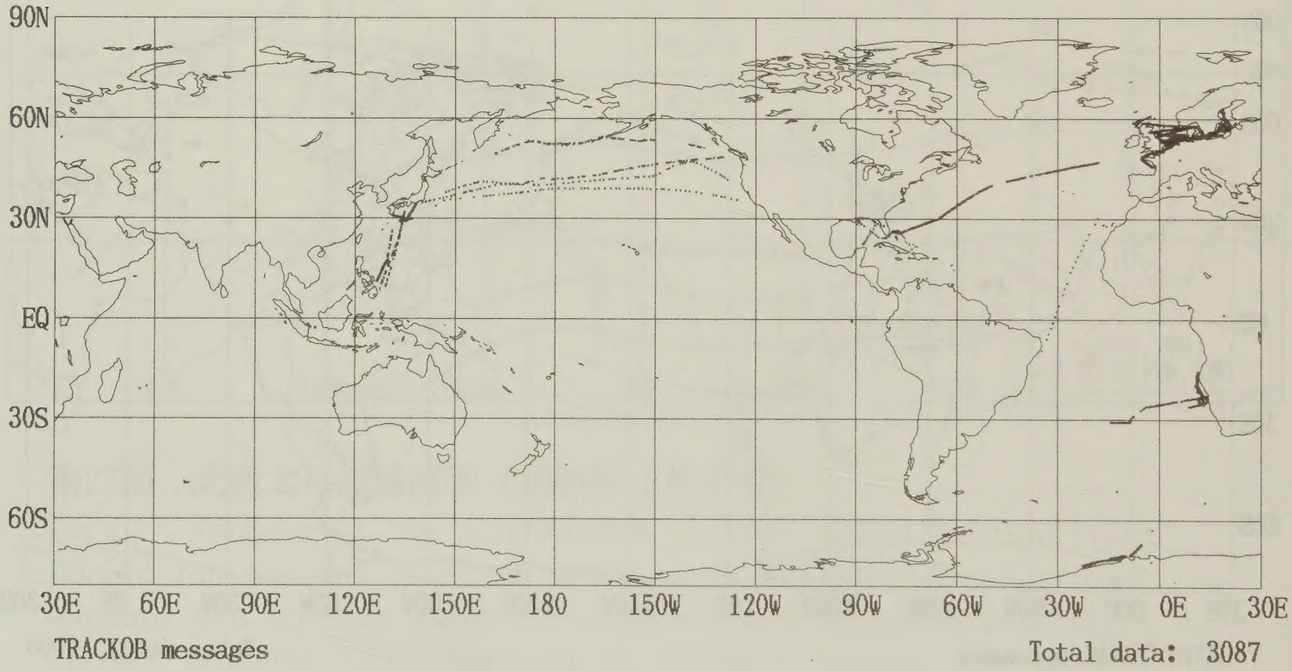
BATHY/TESAC messages Total data: 4006

第28-1図 測点分布図(1996年 2月)

Fig.28-1 Geographical distribution of SHIP messages (SST data, top) and BATHY/TESAC messages (subsurface temperature data, bottom) for FEB 1996.

Geographical Distribution of Oceanographic Data





第28-2図　測点分布図(1996年 2月)

Fig.28-2 Geographical distribution of BUOY messages (buoy drift and SST data, top) and TRACKOB messages (ship drift and SST data, bottom) for FEB 1996.

気 象 庁 海 洋 月 報

Monthly Ocean Report

February 1996 (No. 38)

平成８年３月１９日発行

編集兼 発行所　気　象　庁
東京都千代田区大手町１-３-４

印刷所　モリモト印刷株式会社
東京都新宿区東五軒町３-19